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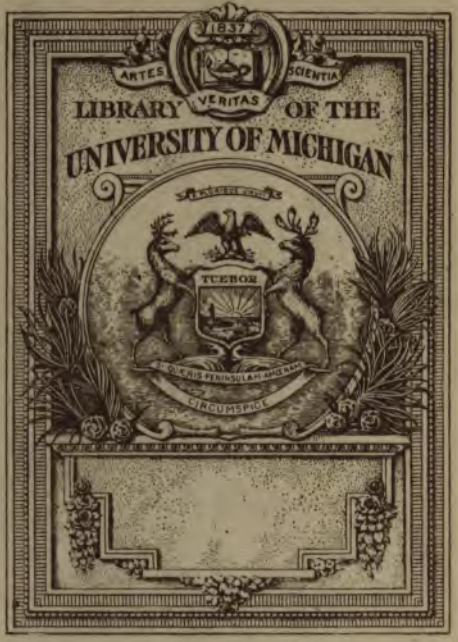
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CONTENTS.

ORIGINAL COMMUNICATIONS.

Tobacco as a Therapeutical Agent. By J. F. Shaffner, M. D. 325
The Diseases of Davidson County. By R. L. Payne, M. D. 335
Letters from S. S. Satchwell, M. D. 340

SELECTIONS.

PRACTICE OF MEDICINE.

On Fever and Inflammation. By J. L. Teed, M. D. 355
Clinical Lectures on Abortive Measures in Cases of Typhoid Fever. By Austin Flint, M. D. 365

SURGERY.

On Perineal Section. By J. Mason Warren, M. D. 375

OBSTETRICS.

On the Treatment of Uterine Inflammation by Nitrate of Silver and other Substitutive Agents. By E. J. Tilt, M. D., M.R.C.P. 385
The value of Anæsthetic Aid in Midwifery. 396

REVIEWS AND EDITORIAL. 404

EXCERPTA.

Whooping Cough—Strychnine in Typhoid Fever—Chlorate of Potassa in Gonorrhœa—Glycerine as a solvent for Belladona—Physicians in the United States—How to improve the taste of Cod Liver and Castor Oils—Dyspepsia—Dysentery—A Pathognomonic symptom of Scarlatina, 410

N. C. STATE MEDICAL SOCIETY.

Proceedings of the N. C. State Medical Society. 113

NORTH CAROLINA

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Original Communications.

Tobacco as a Therapeutical Agent.

BY J. F. SHAFFNER, M. D. OF SALEM, N. C.

"The herb which borrows Sante Croce's name
Some eyes relieves and healeth wounds; the same
Discusseth the king's evil, and removes
Cancers and boils; a remedy it proves
For burns and scalds; repels the nauseous itch,
And straight recovers from convulsions fits.
It cleanses, dries, binds up and maketh warm
The headache, toothache, colic, like a charm
It easeth soon; an ancient cough relieves
And to the veins and milt, and stomach gives
Quick riddance from the pains which each endures.
Next, the dire wounds of poisoned arrows cures.
All bruises heals, and when the gums are sore
It makes them sound and healthy as before;
Sleep it procures, and anxious sorrows lays,
And with new flesh the naked bones arrays.
No herb has greater power to rectify,
All the disorders in the breast that lie,
Or in the lungs.—Herb of immortal fame!
Which hither first by Santa Croce came,
When he (his time of nunciature expired,)
Back from the court of Portugal retired;
Even as his predecessor, great and good,

Brought home the cross, whose consecrated wood
All christendom now with its presence blesses;
And still the illustrious family possesses,
The name of Santa Croce rightly given,
Since they in all respects resembling heaven,
Procure as much as mortal man can do
The welfare of our souls and bodies too."

In a prize essay on "*The use of Tobacco and its injurious effects upon the human system,*" published in the August (1860) number of the "Medical Journal of North Carolina," occurs the following paragraph: "The uses of Tobacco are various, both medically and as a luxury. Medically, its properties may be divided into those that are *real*, and those that are *supposed*. The *real*, were generally known among physicians, even at an early period, who ascribed many virtues to it in obstinate diseases. It may, from the experiments and coroborating assertions of many authors, be pronounced a valuable acquisition to the Materia Medica, and more extended inquiries relative to its properties might very appropriately be made. It is said to be stimulant, sedative, narcotic, sudorific, emetic, diuretic, cathartic, errhine and anthelmintic.

In the present essay, my object shall be, to make some enquiries, relative to the medical properties of Tobacco; and in so doing, will, as in my former, confine my remarks to the principal and only officinal variety of the species, *Nicotiana Major Latifolia*, or the large broad leafed Tobacco.

Of this the leaves alone are officinal in U. S. Pharmacopœa. Analytical chemistry exhibits the presence of two active principles—the one an acrid volatile substance, with little color and alkaline reaction, which has been called *Nicotin;* the other, a camphoraceous, oily product, found in much less quantities, known by the name of *Nicotianin.* An empyreumatic oil has likewise been obtained by distillation, officinal as *Ol. Tabaci.* All these are very poisonous, though *Nicotianin* is believed to be most powerful in action.

Stimulant. The stimulating effects of Tobacco have long been known, and did not escape the discerning minds of our predecessors. The very ingenious experiments of Dr. Cullen, described so forcibly by himself, must sufficiently demonstrate to every one this property of the plant, and I would gladly avail myself of his experiments, by making extracts, did it not demand more space than I am desirous of occupying.

However, here I will endeavor to describe an experiment upon my person, which though it should not advance any thing new, may at least prove interesting. Before commencing, it may be well to remark, I have never used tobacco in any form.

Having obtained a cigar I commenced smoking about one hour after my usual dinner. Fully cognizant how ill on a former occasion a few seconds of smoking had made me, I very much feared my experiment might prove an entire failure.

After a few whiffs, a sense of nausea was rather oppressive, but this soon disappeared. An aromatic warmth diffused itself all over my throat, which extended to the stomach, and continued for about half an hour. Within the first three minutes the pulsations of my heart increased from 76 to 79 beats per minute, continuing to augment, both in frequency and tension, until the 30th minute, by which time they numbered 104 per minute. An oppressive nausea now seized me, alternating with frequent eructations, violent retching, cold perspirations, speedily followed by a sensation of intense sickness, and finally, profuse vomitings. My pulse now became weak and feeble, an indescribable dizziness seized me, and I was unable longer to maintain the erect position. In this state I remained some ten minutes, after which I felt relieved, my pulse still beating quick and feebly. A violent headache now ensued, together with a general sensation of weakness and nervous debility, of which I did not entirely recover until the following day. After the lapse of one hour, I fell asleep and soon after

awaking, found my pulse 74, headache not much improved. Even the following morning, the taste of tobacco was yet appreciable, and I felt an oppressive kind of languor.

From the above experiment I conclude the effect of tobacco to be, in the first place, to increase the frequency of the pulse, and to elate the spirits; in the second, to depress the former and bring on a sensation of drowsiness and sickness in the place of the latter.

Sedative. The sedatory effects of tobacco are attributable to a secondary operation, or indirect debility produced by its immense stimulating powers, when disproportioned to the excitability of the system. To the nervous system and through it to the circulation, it is a most powerful sedative. Few articles indeed do we possess in our Materia Medica more powerful, and in its administration great care is requisite, lest a fatal sedation be produced. Its great liability to produce gastric uneasiness, has ranked it as a nauseant sedative, and this has very much limited its use, being chiefly, when thus employed chosen by virtue of its speedy action. For this reason it is frequently administered in Tetanus, and at times with happy results. Indeed the complaints in which it is most usually employed, are those characterized by spasm, where a powerful and prolonged sedation is requisite. Among the many diseases in which it may be advantageously employed, I may mention: Hernia, especially of the incarcerated variety where it generally occurs that costiveness is one of the most alarming symptoms, and "it is in such affections," says Dr. Bell, "I would recommend tobacco smoke, thrown up in form of injections, as preferable to all other remedies."

In Intestinal Tympanitis, clysters of tobacco have been found invaluable, slight purgation, nausea and diaphoresis being induced.

In asthmatic cases, it has frequently afforded much relief, bringing on free expectoration, invariably followed by great amelioration of symptoms. In dislocations, especially of obstinate or very muscular individuals, a tobacco enema

may afford a happy substitute, in the absence of chloroform or ether. Other obstinate diseases might yet be mentioned in which the sedative properties of tobacco have been of marked benefit.

In every instance alluded to, the affection is owing to spasmodic contraction of muscular fibre, and the relief afforded by the administration of some preparation of tobacco, is due to complete relaxation.

There can be little doubt that this article, like all other powerful sedatives, exerts a direct influence on the nervous system. Of the precise nature of its impression, we know nothing. The most careful examinations, directed by learned, scientific and observing men, exhibit no physical alteration in the nervous structure. When administered in large and decided doses, it immediately depresses the vital forces, scarcely allowing any time to observe the rapid transition from life to death. Such results however, are only manifested when it is administered in a concentrated state; while, when properly diluted, the effects are merely of a depressing character. Hence the great advantage of the medicine in inflammations, and all kindred affections.

Narcotic. There are those who seem to believe these powers are merely assumed, and attribute the narcotism to its sedative tendency. It has moreover been called a sedative narcotic. Experience proves, if one unaccustomed to its habitual use, indulges either by smoking or chewing, a drowsy effect is the result. My experience already referred to, has been of this nature.

Prof. Wood writes: "When moderately, though habitually employed, not in sufficient quantities to induce nausea, it is said to produce an agreeable, soothing effect, inducing pleasant feelings, which has rendered it a favorite, an almost universal article of luxury throughout the entire world. There is also a slight peculiar impression on the brain, for which there is no adequate name, and which only those who have felt it can appreciate." In toothache, the smoke of tobacco frequently imparts relief after all

other remedies have failed. Here its action is narcotic, and only so, the morbid sensibility of the nerve being but temporarily destroyed.

Diaphoretic. Small doses certainly relax the pulse and skin, and generally induce copious diaphoresis, without much previous stimulation. Therefore, in nauseating doses, whereby sweating is produced, its exhibition in fever, is invariably followed by a salutary effect. We have recorded a well authenticated case, in which the external application of the leaves to the wrists of a child, produced considerable nausea, *free diaphoresis*, and at length vomiting with repeated alvine dejections. The child had been for some time afflicted with obstinate and intractable fever, and usual remedies had all failed in affording relief. By the virtues of tobacco in the manner above specified, the disease was totally subdued, and the child happily rescued from impending death.

From this then, is it not probable that the complicated operation of tobacco, would render its exhibition beneficial in many cases of fever? And would it not in this consideration be expedient and wise for physicians to practice the use of it more frequently than they do? Its operation as a sudorific is of course indirect. Its main agency is exerted on the nervous and circulatory systems, which it depresses, and to this quality is due its efficacy.

Diuretic. Of its virtues as a diuretic, we have considerable evidence. In cases of Ascitis and other dropsical affections it has proven valuable as a remedy. Indeed, some writers contend it is excelled by none of our indigenous plants, of which there are many. An instance is related, in which the *Digitalis Purpura* so much celebrated for its diuretic quality, failed to relieve a violent case of Ascitis, and the tobacco, in form of infusion, proved entirely successful.

Diuretics in general have so long been employed with benefit in dropsical affections, that it should become desirable to increase medicines of this class, after having learned

to exhibit with advantage those already known. We therefore, hold in high estimation this plant so evidently endowed with the power of speedily evacuating accumulated serum, by a natural discharge. As a diuretic it may be administered as a tincture, prepared from the leaves, first rendered crisp by means of heat. It has also been given in substance, powdered, and even as ashes.

In dysuria, or retention of urine, it has been successfully employed. By some it is given in infusion per anum, while others prefer it as a cataplasm applied to the perineum. The good influence is exerted upon the muscular spasms of the neck of the bladder, permitting its contents to be evacuated. In these instances it may be termed *a local diuretic.*

Emetic. That it possesses emetic properties, nearly all are ready to testify, who for the first time assumed its use. It is probably in consequence of its emetic action, when taken into the stomach, it is so seldom administered in this way; and hence it is usually exhibited either as enema, by inhalation, or employed externally. It is however given as an emetic in form of snuff, five or six grains composing a dose. An instance is related of arsenical poisoning in the person of a lady, to whom, in the absence of other remedies, a quid of tobacco was speedily administered. Violent emesis ensued and the patient recovered. The tobacco itself may have some power to counteract the deleterious effects of the poison, but I am of opinion, the immediate vomiting saved life. However, some authorities believe something antidotal to arsenical poisoning exists in tobacco. Dr. Mitchell, of Jeff. Med. College, believes that when tobacco comes in contact with arsenious acid, a *tertium quid* is the result; a sort of compound poisoning, in which the original poisonous qualities of both articles are lost. It has long been a prevalent custom to expose a burnt part to the radiation of heat or to hot lotions, and the success is often signal. Shakspeare alludes to the practice and to the fancied law of the economy in his "*Romeo and Juliet:*"

"Tut man! One fire burns out another's burning;
One pain is lessened by another's anguish:
Turn giddy and be holp by backward turning,
One desperate grief cure with another's languish.
Take then some new infection to thy eye,
And the rank poison of the old will die."

The Portugese, among many other virtues which they attribute to tobacco, have classed it as a *counter poison*, hence the appellation bestowed—"Herba Sante."

The leaf soaked in hot vinegar and laid to the epigastrium, has procured prompt emesis, and may well be resorted to, when other emetics cannot be taken into the stomach.

Cathartic. In cases of obstinate constipation, it has been found valuable as a cathartic, inducing immediate expulsion of all indurated matter. "The smoke," says Dr. Cullen, "thrown into the rectum, often proves successful after the failure of many violent cathartics." The advantage is, that it enters much higher into the intestines than injections commonly do, and is therefore applied to a larger surface, wherefore the effect is more powerful than that produced by liquid injections generally. It is much to be regretted injections of tobacco are not in more general use, the utility of which in severe cases of colic, constipation, &c., far exceeds that of most other remedies. We have the high recommendation of Prof. Wood, who strongly urges its employment in cases of obstinate colic, ileus, constipation, which have resisted the ordinary remedies for relief, and in especial, when attended by spasms of the bowels. It is also well spoken of in form of cataplasm to the abdomen in *Colica Pictonum*, and generally produces the desired result in a short time. Free alvine evacuations ensue, and the relief from all pain is prompt. The poultice, moreover, has several advantages over all other modes of exhibition, being more easily applied and more readily controlled, rendering it therefore, decidedly *the* safer mode.

Errhine. The powder known as snuff has long been in

great repute as an errhine. Its use is frequent, and has received high encomiums as a remedy in headaches, pains of the ear, and opthalmia. How far its effect may extend, cannot exactly be determined, but probably it influences to greater or lesser extent, the whole encephalon. A belief generally entertained, that serious results threaten when the Schneiderian membrane becomes dry, points out the necessity of restoring the mucous discharge if possible. Here errhines will be of avail, of which tobacco is most prompt and reliable. A case is related in which tobacco was employed with marked benefit by a lady who was afflicted with violent headache, accompanied by the sensation well known as *stuffing in the* head. Many remedies were proposed and tried, but ineffectually. A physician was called in who prescribed snuff as a sternutatory. It produced violent sneezing, and the ejection from one of the nostrils of a plug of hardened mucous, nearly an inch long, after which she experienced relief, and immediately recovered. The result may be borne in mind with advantage, as it may attract attention to a cause of headache, that might otherwise be unsuspected.

Anthelmintic. The fumes of tobacco injected into the rectum have been highly valued in dislodging Ascarides. Poultices applied to the abdomen have also been beneficial in destroying and causing to be expelled worms from the alimentary canal; and sympinternally administered has been highly recommended. Injections of the decoction thrown up the nostrils daily for a week or ten days, have caused the expulsion of worms from the nose which had occasioned offensive discharges and severe suffering to the patient. At first the injection was very painful, but in a few days it became more endurable, and all fetor was completely corrected. Several of the most powerful medicines, whose virtues as vermifuges are held in great repute, sometimes fail; and in such instances the powerful influence of tobacco may be resorted to. It deservedly merits medical attention, and should be tried in all cases, which

may have resisted the more feeble operation of other anthelmintics.

Having thus treated of the many diseases incident to mankind, in which the exhibition of tobacco has been found so useful, I may, in conclusion, be permitted to remark, it is to be greatly deplored its consideration has been so little attended to by physicians, who have been led to deprecate the worth of a medicine (whose benign influence in eradicating disease, has in many instances been evidently confirmed) by the deleterious properties with which it is endowed, and the supposed dangers of exhibiting it on this account. Its baneful effects either in its abuse or excessive doses, should by no means dissuade its employment as a Therapeutical agent. Powerful medicines are always among the best, and are only rendered injurious in the hands of timid, injudicious or ignorant practitioners. The invaluable aphorism—"Poisons in small doses are the best medicines, and the best medicines in too large doses are poisonous," merits, in this instance, our attention.

The Diseases of Davidson County.

Read before the N. C. Med. Soc., at its Annual meeting in Morganton, May, 1861,

BY R. L. PAYNE, M. D., OF LEXINGTON, N. C.

Within a few years past a complete revolution has taken place in regard to the character of the diseases of Davidson county. Formerly our physicians had to contend almost solely with diseases originating from malaria; in fact, the mystic god of malaria (if I may use such a figure) held supreme sway, and we very seldom met with diseases of any kind, but what were stamped, more or less, with this unmistakeable impress. But during the last four years, it has been a rare thing to meet with diseases of a malarious origin. We now have a much sterner, more unrelenting and more insidious foe to deal with in the form of Typhoid diseases. Where is the physician who (after having had some experience in the treatment of diseases of a typhoid type) is not forced to admit, that in them at least, he has met with a foeman worthy of his steel.

Typhoid Fever has prevailed to a greater extent during the past four or five years in our country, than any other disease.

I do not think all parts of the county have been entirely free from its ravages at any time for several years. When it first made its appearance amongst us, our physicians being used to the treatment of Intermittent and Remittent fevers, were not prepared for it, and it proved a most fatal malady under their active treatment. Some of our physicians were even heroic enough to bleed, and consequently unfortunate enough to lose their patients. I am willing to admit that cases of Enteric fever may occur, and I can conceive of such, in which the use of the lancet may be admissible and even necessary; we have high authority for such a practice, but my humble opinion is (after some experi-

ence in the treatment of it) that general bleeding in typhoid fever is heroism merged into the very extreme of rashness, and I have never yet met with the case in which I have been able to "screw my courage to the sticking place." Cathartics were used to a very great, and very injurious extent formerly, and even now the weight of authority is in favor of the use of laxatives in this disease, which in my opinion is bad practice in the majority of cases, such as I meet with, for it is not unreasonable to suppose that the inflamed and ulcerated glands of Peyer and of the mesentery are made worse instead of being benefitted by cathartics or aperients which increase the pristaltic action of the bowels, and irritate directly by producing a more constant passage of fecal matter, and it is my confirmed belief that we might with just as much propriety, attempt to heal a fractured limb without the use of splints and rollers as to try and effect the cure of these inflamed and ulcerated patches by irritating and keeping them in continual motion by active, or even moderate purgation. In almost all cases diarrhœa exists, and in the majority of those in which it is not really present, we all know the bowels are very susceptible to the action of cathartics, and the great danger is of producing hyper-catharsis. Those cases have done best in my practice in which I have been able to restrain the bowels to one, two or three actions a week. I am thoroughly convinced that the use of the Oil of Turpentine has been a greater source of evil than of good in the treatment of this fever, and more cases have been injured by it than have been benefitted, simply because it has generally been used indiscriminately. It is applicable, and is a great remedy in some cases, but in the majority of those we see, modified as they are by our southern climate, it will not do; at least, such is my experience. The treatment which has been most successful in my hands, and which is, in the main, that pursued by our physicians, is the following:

When first called to a case, if the bowels are not already sufficiently open, I administer a mild aperient or enema—

the latter of which I greatly prefer—but more frequently I am compelled to use opiates and astringents to keep the diarrhœa in check. For this purpose I am in the habit of using a solution of the sulphate or acetate of morphia in the milder cases; but in the more severe, a combination of opium and acetate of lead to be given every two, three or four hours, as the case may require. In the very outset of the case I prescribe a saturated solution of the chlorate of potash, of which the dose is a teaspoonful every three or four hours as long as the diarrhœa continues. I am not able to say what is the peculiar "modus operandi" of this salt, whether it acts indirectly through the blood, or directly upon the ulcerated glands of Peyer: one thing I do know, however, since it has come into general use, the mortality has been far less, and hemorrhages have been less frequent in my county than they were formerly in this disease. If the patient is restless and complains of want of sleep, I give him solution of morphia, lupulin, or something of the kind, for sleep is absolutely necessary in these cases, and if there is delirium or any tendency to it, the head should be shaved, and cold, or warm application kept to it, as may be most agreeable to the patient. In fact, I think all cases of Typhoid Fever do better to have the head shaved, whether there be delirium or not. The patient's linen, &c., must in all cases be often changed, and his room should be large and well ventilated. I direct my patients to be sponged frequently with cold, tepid or acidulated water as is most agreeable to them, and I believe this simple remedy highly serviceable. I also allow them the free use of iced and acidulated drinks.

About the second week of the disease, and sometimes much earlier, I begin the use of stimulants and tonics—as a stimulant, I prefer to every other good home-made brandy or whiskey, and as a tonic I prefer the infusion of serpentaria, though quinine answers a good purpose in some cases. These I prescribe "*pro re nata.*"

If hemorrhages supervene I give large doses of sugar of lead and opium, more especially in hemorrhage from the

bowels, from six to ten grains of sugar of lead, combined with one or two grains of opium and given after every bloody stool, has seldom failed to check the most alarming hemorrhage, and I have never seen any evil result from such doses, but could adduce numerous instances to show their marked benefit. Blisters over the abdomen I consider of the utmost importance, more particularly over the right iliac region, and I frequently re-apply them with advantage. Meteorism yields more readily to assafœtida given in pill or by enema (in my cases) than to any other remedy. The diet, I think from the beginning should be nutritious, and after the second week, or sometimes sooner, I advise good rich soups of mutton, beef, &c., &c.

I may be a little *ultra* in my views respecting the treatment of this disease, but who can blame me for it in this age of ultraism, since it is the habit of every man to think and act as he pleases, and since, if I am I owe it solely to the teachings of what little experience I have had with it, and I would not now exchange the teachings of experience for those of any other school. I believe in giving nature a fair chance. I believe there is such a thing as the "vis conservatrix naturæ," notwithstanding very many in this age scout at such an idea, and I believe that the tendency of most cases of fever is to recovery, and can be greatly assisted by the physician, but at the same time I am sure many a hapless individual has fallen a victim to the "nimia cura medendi," and perhaps as often in typhoid fever as in any other disease.

During the last spring and early summer months of '58, '59 and '60, dysentery prevailed in an epidemic form. In 1858, it presented itself in its most malignant type, and proved most fatal among young children. I know of no disease which more effectually baffles the skill of the physician than this disease occurring in young subjects, and I cannot confidently recommend any plan of treatment as infallible; that from which I derived most benefit was opiates combined with alum, sugar of lead, or sulphate of

zinc given by mouth, and assisted with astringent and anodyne injections, together with proper dietetic regulations, confinement to the recumbent posture, avoidance of all liquids, &c., &c. Cases of this disease among adults yielded very readily to treatment.

In the summer, fall and winter months of 1860, an epidemic of yellow jaundice prevailed in Davidson, and several cases have been seen in 1861. I do not think I exaggerate when I say, that during the months of July, August, September and October, we had at least three hundred cases of jaundice in our county. For several months it was confined to a comparatively small extent of country, but gradually spread until hardly any part of our county was entirely exempt. There was nothing peculiar in this epidemic to distinguish it from jaundice as it occurs sporadically. What was the cause of it can only be conjectured! May it not be that the sudden vicissitudes of weather, together with some local cause, might have given rise to it, and may not the local cause have been malaria again lurking around her old hiding places in Davidson; and further, may not this epidemic have been a forerunner to warn us of the re-appearance of Intermittent and Remittent fevers in our midst? If it was entirely dependent on a local cause it was an endemic, and not epidemic disease.

Our physicians differed in regard to the treatment of it. Some of them believing in coaxing the liver by alterative doses of calomel or mercury in some form, while others of us hit him (the liver) a good lick with from 15 to 25 grains of calomel, given at bedtime and followed in the morning with castor oil, and after one or two large doses, we either gave it in alterative doses, or gave the nitro-muriatic acid together with the bitter tonics, alkalies, &c. Quinine proved useful in many cases.

I have no hesitancy in saying that I greatly prefer calomel in large doses in epidemic jaundice, because in the treatment of seventy cases, I gave both plans a fair and impartial trial, and I am thoroughly convinced that those cases

treated with large doses did much better, and recovered sooner, than those treated in the opposite way.

We had, during the winter and spring, a goodly number of well-marked cases of Diphtheria. The first case or two which occurred were past hope before medical aid was called in, but since then the people of Davidson have become alarmed on the subject, and the mortality has not been very great. We treat these with muriated tincture of iron and solution of chlorate of potash internally, and apply locally a solution of the nitrate of silver from 30 to 80 grains to the ounce. We give some cases stimulants and feed all well, and this shall be our treatment until convinced of a better. There are many other of the "ills which flesh is heir to," common to Davidson county, and about which a great deal more might be said, but I will desist for fear your patience and forbearance be worn entirely threadbare.

Letters From S. S. Satchwell, M. D.

PARIS, February 20th, 1861.

CHARLES E. JOHNSON, M. D.—

Dear Doctor: France, with a population of nearly forty millions, and a medical profession of unrivalled professional devotion, has only four medical schools, while our own country contains some fifty, if I mistake not. The great Metropolitan school is, of course, situated here, and the remaining auxiliary schools are at Strasburg, Montpelier, and Lyons. Within the last year or two no one can enroll his name at these Medical schools as a pupil, without presenting two Diplomas—one of Bachelor of Arts, and the other of Bachelor of Science. But we take into our offices as medical students, and our Colleges graduate them as Doc-

tors, men who have never been through the elementary spelling book, nor ciphered as far in Daboll's arithmetic as the good old Rule of Three. The whole number of medical students attending lectures each year at these French schools average about two thousand. How many there are every year in attendance upon our hosts of Medical Colleges and how many graduates they annually turn out upon the body politic, I shall leave for you to figure up for the benefit of our readers. Here the supply is only equal to the demand, and the profession is not degraded by the ignorance and demagogueism of ambitious medical demagogues and pettifoggers; but doctors are licensed by government upon the recommendation of an able and impartial profession.

In America, the supply far exceeds the demand, and the Colleges have prostituted the profession, and caused an American Medical diploma in Europe to be regarded more as an evidence of reproach and ridicule than as a mark of merit and capacity in those holding it. It causes me to feel chagrined when I thus see an American diploma, regarded as so much waste paper, and you need not then wonder that I should continue an advocate of American medical reform. No man can practice medicine or surgery in France without he has a French Medical Diploma, and no man can get that diploma without studying seven years and sustaining an approved and searching examination before an impartial tribunal. So that the croakers at our North Carolina Medical Board of Examiners, an institution entitled to the support of every good man, would find but little sympathy here in their opposition to this professional necessity. They would find the doors, to practice here, closed against them, not more by professional sentiment than by a due appreciation in the community of health and life. Though the time required here for study and Hospital service extends to seven years, many are nevertheless unable, even then to graduate, so trying is the ordeal of the examination, and have to be rejected or put back for longer study. But in our country a man can graduate in medi-

cine at short notice and without any other qualification than the payment of his lecture fees, even if his time of pupilage is passed outside of college walls, in extravagance and dissipation. Here he is examined thoroughly at stated periods during his whole course, and no royal blood nor family influence can secure his diploma, but he must rely alone upon scientific attainments and intellectual strength. And the same holds true in relation to the filling of any medical vacancy of honor or profit in the various Hospitals, Medical schools, or other public institutions.

It is all done by a system of *concouvring* which gives to the poor and obscure the same chance and rights as the wealthy and influential. Our boasted republican system, as practised in our public medical institutions, generally departs from this true and just policy and dispense their honors and profits from less worthy motives. With us kissing goes by favors and by considerations connected with popular elections. Such dispensations are made from calculations of wealth and political qualifications, and in a vast majority of instances, merit and intellect are ignored. I am running this brief comparison more in sorrow than with pleasure, knowing that in most cases truth does more good by being told than suppressed, and hoping that every drop poured into the rising tide of medical reform at home will not be without its weight in aiding to suppress the prostituting influences of our system of medical education, so prolific of medical nuisances. A physician here has no need of even putting his name over his office door or on his door of residence. He merely announces that a graduated Doctor can be had within, and this is as good a passport to public patronage, under the operation of the system here recognized, as if surrounding himself with all the captivating paraphernalia of our most showy practitioners, whose means to secure practice, would, in fact, if attempted in Paris, consign them to shame and disgrace. The attempts of American physicians sometimes made here to catch the popular breeze by showy means more popular elsewhere

only excites the laughter and ridicule of the community and the neglect of the profession. However fond of gayety and of glory and of war the French people are, it is equally true that they will not confide their health and lives to the treatment of incompetent medical men. The French government, directed by that extraordinary man, Louis Napoleon, places a proper estimate upon human life and comfort in all its relations to the medical profession; and the Emperor is constantly developing plans for the encouragement of medical science, and the comfort of the sick, with an energy of purpose and a minuteness of detail that is most useful and gratifying. I should be glad to see our own government and laws enter more heartily into this great work, and our own people rising to a higher appreciation of its importance and necessity.

The remark so often made by the ignorant and designing that quacks and quackery flourish most where medical science has most advanced, is incorrect. Paris is in proof of what I say. Quacks there are here, of course, because they are a part of that great humanity which spreads itself over the whole world. But I am convinced that they are comparatively more few in number and make less in proportion than in any other city. The celebrated quack negro doctor who flourished here a number of years ago with his panacea for cancer, and who was allowed to practice by special enactment, was at length arrested for malpractice, and is now expiating his crimes in hard prison labour as the reward of his rascality and destruction of human life.

It has been said in support of our existing system of manufacturing doctors that it is unavoidable, as the large majority of our medical students are poor and unable to make a greater outlay of time and money in preparations for practice. If the remark be true then, such men should never enter the profession because all admit that human health and life should not be confided to incompetent hands. But it is not true. My own observation teaches me that the great mass of our medical students are superior in pecuniary re-

sources to the French students who have to support a long apprenticeship of seven years before commencing practice, even after a diploma of art and science previous to commencing medicine. The dress and habits and manner of living of the throngs of students who daily occupy the seats of the lecture rooms here are evidence of this. I know of scores of medical students here who are toiling on in poverty from year to year, compelled to subsist, a great many of them, on from fifteen to twenty five cents a day. It is more the luxury and idleness and extravagance of our young men than their indigence and necessities that are filling the profession to overflowing with inefficient members.

I have before referred to Chassaignac, and to the Hospital Laraboissier as a favorite among the valuable Cliniques, medical and surgical, of this wonderful city. You will remember Chassaignac as the inventor of the Ecrasseur, which was introduced into our country a number of years ago. If, like many of the French physicians and surgeons he has his crochet, and like so many others carries a favorite idea to an extreme, and thus sometimes becomes too enthusiastic in its praise, and too promiscuous in the application of what in its place is really a good and practical instrument, we can pardon him; for to see him as I have today, remove the entire tongue, hemorrhoidal and erectile tumors, and amputate the neck of the uterus, not only speedily, but without the loss of a drop of blood, covers a multitude of heterodoxies. Its construction and operation is simple. A kind of metallic chain, with short but solid links is thrown around the base of the tumor or by the aid of a trocar and canula carried through any of the soft tissues. By a simple mechanism, the arc described by the chain is gradually lessened, and the tissues enclosed by it are separated by the force of the pressure. No ligature is needed in operating, as the passage of the chain through vessels causes such a retraction of the coats as renders the ligatures unnecessary. I believe that in operations upon parts where the eye cannot well reach, as in those about the

tongue, rectum, &c., this ecrasseur is an instrument of great value.

Chassaignac's "drainage," is a revival of the old doctrine of the seton, as his opponents, though denied by himself, contend. With a long or short trocar, according to the parts diseased, he plunges it, lined with a canula, through the abscess and out again through the integument. With the simplest arrangement no injury can be done to the vessels and nerves involved. Withdrawing the trocar, he passes through the canula left behind, a tube of india rubber, perforated with holes for the escape of matter and ties the two ends together. Thus the serum or pus gradually escapes, the parts collapse as the matter is poured out, and the introduction of air is prevented. He bases the value of his "drainage" upon its ability to exclude air, holding, as he does, the theory that the admission of air into abscesses causes a decomposition of pus which, acting as a poison is absorbed into the system, giving rise to depression of the vital forces, irritation and hectic fever, &c. Nelatin, the best surgeon here, uses this "drainage," and this is a high endorsement. On the other hand, there are those among them, that excellent surgeon and learned critic, Malgaigne who deny that the contact of air with pus causes a new formation that can injure the system, and therefore, such men reject the practice of Chassaignac. When we consider the danger of opening large abscesses in depraved constitutions or in delicate and scrofulous subjects and their tendency to spread and to burrow into the bones and other hidden places of the organization, and thus, in their many liabilities to destroy life, we cannot fail to hail with approbation any new method likely to be the most successful in curing them and in saving life.

Yours, &c.

S. S. SATCHWELL.

PARIS, March 15th, 1861.

CHAS. E. JOHNSON, M. D.—

Dear Doctor: You are aware that in the diagnosis and treatment of diseases of the respiratory organs, the French physicians are justly entitled to a high rank among the foremost. For its progress in this direction, the medical world owes much to the French ever since the days of the immortal Laennec. Trousseau, who is certainly a great man, Bouilland, the immediate successor of Laennec at the Charity hospital, Piorry, Barthez, and others of fewer years, are men of distinction, and are shedding a halo of light upon the important branch of thoracic diseases. From these sages and their predecessors here we have learned, not only to observe the physical signs, which as an important auxiliary means in diagnosing thoracic and abdominal disease, no reasonable practitioner now hesitates to accept, but they are also entitled to the credit of enabling us to appreciate at an early period that hetorological deposit in the pulmomonary tissue, and that antecedent state of mal-assimilation and diminished organic vitality, well known as precursors of tuberculous formation. Thus it is that in tuberculosis, prior to any extensive formation and deposit of this obnoxious matter, we are able to discern, like skilful navigators, the approaching storm, and to seize upon the precious time in combating its fearful attacks.

It is contended here by high authority that among the means efficient in arresting the approach of phthisis pulmonalis, as well as in the cure of other less inveterate and chronic affections of the throat and chest, inhalation should be used. It is known that in our country, such quacks as Hunter pretend to use it with an air of mystery and intrigue peculiar to that class of medical vampyres; but they do it without a correct appreciation of the principles of its application, or the circumstances of the cases requiring it. But because the quacks use inhalation is no good reason why

we should refuse to do so or to apply any other good remedy whenever it is supported by good argument and reliable authority. Among the regular Parisian practitioners who prize highly this method of treatment, may be named M. Piorry, to whom I have already referred. The following case has recently come under my observation in the service of this experienced physician at the Charity hospital:

B. aged 19 years, a cook; born at Paris, of medium height and lymphatic temperament, had been troubled with a cold for the last four winters. His cough was not very troublesome and without expectoration. During the past winter he was attacked with other grave symptoms. His cough had become harrassing, particularly at night; expectoration abundant; loss of flesh and appetite. On examination, M. Piorry observed the following condition: percussion dull at the apex of both lungs; the right to the extent of three inches anterior, and the left less. Auscultation indicated a diminished respiratory murmur with slight broncophony over the apex of the right lung, and prolonged expiration over the left. The patient was immediately submitted to the treatment which M. Piorry employs in similar cases and of the efficacy of which he claims overwhelming proof. The result of this case certainly corobborates his views. The treatment consisted in the daily inhalation of the vapor of iodine disengaged at the bottom of a suitable vessel with a large mouth. Internally, ten grains of iodide of potassium three times a day. Diet eminently reparative with strong wine. Some preparations of cinchona every morning, with iron reduced by hydrogen at each meal. This treatment has been used for two months, and the patient is much improved. He has been able to resume his usual occupation, and his health is now pretty good. The density of the right lung has almost disappeared; his cough is no longer offensive; and his flesh and strength is restored. The objection which some might raise that it was not so much the inhalation of iodine, as the other means used that did the good work,

M. Piorry would consider groundless. He always combines the remedies, however, indicated in this case. But his experience of thirty years in hospital practice, leads him to place great virtue in the doctrine of inhalation, not only in bronchial affections, but in goitre, and in general diseases of a chronic, scrofulous, and tuberculous character.

In connection herewith, I must tell you of a new instrument, that among the many new things introduced into the profession, has lately become a candidate for professional favor. I refer to the *Laryngoscope*, for exploring diseases of the throat. It is a German instrument. It consists of an ingenious arrangement of reflectors by which a concentrated ray of light may be thrown into the throat, and the organs of the larynx brought admirably into view. Lectures upon diseases of the larynx, with instructions as to the use of this instrument have been recently given here. The invention necessarily brings with it an increased devotion for the study of the diseases of the larynx. The objection, held to a recent period, by great men on both sides of the Atlantic, that no man ever had, and never could, reach down into these hidden parts, is giving way by the experience of even awkward manipulators. A laryngean *porte caustique*, somewhat like Lallemand's *porte caustique* for the urethra has been lately presented to the Academy of Medicine and seems to realize the essential requirements. When it arrives in the larynx it opens by a slide, allowing free use to the *porte caustique* in the revolutions. There are, of course, some who do not approve of this instrument. In view of the opposition which every new theory and invention meets with this is not surprising. Men of antiquated views, and who are too indolent to study or too bigoted to change before the triumphant march of science, are not apt to fall into the current of innovation however rightly it flows. Auscultation and percussion were a long time sneered at though their utility is now universally recognized. The opthalmoscope, so valuable in diagnosing obscure affections of the eye, was bitterly opposed at first, but now its intrin-

tic merits have swept away all resistance. I even saw my teacher at the Charity hospital a few days ago pronounce that a patient had Bright's disease of the kidneys, by no other means used than a careful examination of the eyes with the opthalmoscope; and the result of the autopsy, the case resulting fatally, proved the correctness of the diagnosis from the solitary revelations of this instrument. The appearance of albumen in the urine by adding nitric acid, of course was seen before death, but the test was not applied until after the responses of the opthalmoscope, indicated Bright's disease. The microscope has also had a heavy opposition to meet, and even Velpeau and others, who are living more in the past than in the present, raise their voices against its indubitable conclusions, though the resistless requirements of the age do not recognize a practitioner as at all up with the times who does not use the microscope in his daily practice. The uterine speculum has had a yet more unrelenting warfare to fight from those whose prejudices antagonize light and reason And yet so triumphant and unscathed are its advocates coming out of the conflict that there are now comparatively few who will so far do violence to science, and so much injure their own reputation as to condemn it in intelligent communities.

The important part, physiological and pathological, which the uterus plays in the female economy, meets with a wise appreciation here, and consequently to a skillful treatment of its numerous maladies. They are not afraid of this organ here. They probe to the bottom of its troubles and the causes and effects, whether plain or obscure, immediate or remote, are scanned with a carefulness and comprehensiveness that show what remarkable advances are being made in uterine pathology, and that the French are not behind in attaching due importance to the varied and multiplied forms of diseases of this important viscus. No intelligent practitioner, who loves his profession, can reside here long and fail to perceive to its full and sorrowful extent, that the objections so often raised in our country to the

use of the speculum and to uterine applications are as strange as they are certainly groundless. He will soon discover that they are indicative more of a spirit of retrograde than of progress, and that whilst thus imposing obstacles to useful science, such medical objectors are robbing humanity of its brightest charms and hurrying many a lovely female to a premature grave by parading before her sensitive nature the deceptive shadows of false modesty and erroneous conclusions that are as unworthy of a gentleman as they are destructive to human health and happiness. Not that the French physicians advocate an indiscriminate use of such local means of diagnosis and treatment. On the other hand, they are very discriminating in their use. In the case of the uterus they are governed in their course by established principles of disease. These principles are based upon the fact that as the structures of other parts of the organization, homogeneous to the uterus, are to be treated when diseased, both locally and generally, when admissible, so there is no good reason why the uterine diseases should not be treated according to the same acknowledged principles, and not in accordance with the suggestions of a false taste and squeamishness that should never be placed in the way of human health and life.

The thousand and one varieties of mechanical means for supporting the womb and regulating its displacements are generally ignored as productive of more evil than good. More radical means are used. A careful examination is made of the general system and the history of the case and the actual pathological condition of the womb and its annexal is ascertained; and then by local and constitutional means, efforts are made to remove the cause and not simply to treat its effects. This often leads to the treatment, legitimate here, of making with impunity, injections into the uterus, and of making, by suitable means, applications of nitrate of silver and other remedial agencies, not only to the mouth and neck, but also to the body of the organ through its cavity. Thus are uterine disorders cured—old

chronic affections removed, that may have resisted less efficient means for years. And when these efforts fail, the same parts are reached by delicate instruments expressly made for reaching the surfaces and cavities of invisible and hidden structures, and for applying remedies to them. Granulations upon the mucous surface of the neck and cavity of the uterus, so often obnoxious to treatment, and in so many cases wearing out the health and lives of female sufferers, are treated here with marked success in this way. The granulations are excised and the way paved for other local and general treatment. In the diagnosis and management of displacements, metrites, indurations, ulcerations, &c, &c., the French physicians are wide awake, and with the love of science and of glory which distinguish the professional men of France, they seem determined not to be outstripped by the profession of any nation in the diseases of women, as well as in any other branch of the profession.

But I have been often surprised at the ignorance here of the views and operations of our American physicians and surgeons. For example, in an operation for the exsection of the inferior maxillary bone performed a few days ago at the Petit hospital by that bold surgeon and dashing operator, Maisonneuve, he proclaimed himself as the first who had performed that operation, whilst the truth is that our own Mott, of New York and other distinguished American worthies had done it successfully before Maisonneuve was born. Again, in the interesting and eloquent course of lectures which Trousseau has been giving this season at the Hotel Dieu, he remarked, in speaking of yellow fever that in death from that disease the liver almost invariably presented a morbid condition peculiar to that fever. This I take it is contrary to the views of our southern practitioners and will not be supported by the pathological statistics of yellow fever in the south. When he made the remark, I chanced to be sitting by Dr. J. Morrison, a talented and rising young surgeon of Lousiana, now sojourning in

Europe for professional improvement, and he observed, that during five years service in the New Orleans hospitals and alms houses, he had examined more than five hundred cases of death from yellow fever, and in very few cases had he been able to detect any such anatomical lesion or pathological condition as claimed by Trousseau.

The prices paid here for medical services and surgical operations are such as would cause many of our grumblers at doctor's bills at home to cease their complaints and consider themselves as fortunate, if they could only see the French tariff of charges. A large number of the profession get immensely rich by their practice. Nelaton makes forty thousand dollars a year by his profession, and is now probably the wealthiest surgeon in the world. Next to Nelaton, about in the order I name them, comes Trousseau, Jobert, Rayer, Andral and Velpeau. Velpeau, who came here a poor blacksmith, has made by practice, a fortune of about a million of dollars. I learn from a source entitled to credit that he has become inordinately selfish and penurious in his old age. He manifests at times an unreasonable opposition to the inventions and improvements of younger members of the profession whose progress and exploits are about to overshadow his own reputation, based more upon great experience than upon shining qualities, personal or professional.

I regret to announce to you the recent death of Aran. He was a young man of great practical ability and a brilliant writer and lecturer upon diseases of women. He has died too early for the good of science, and the profession are everywhere mourning his loss.

Yours, &c.

S. S. SATCHWELL.

SELECTIONS.

Practice of Medicine.

On Fever and Inflammation.

BY J. L. TEED, M. D. OF MENDOTA, ILL.

Next to the various processes of healthy nutrition, fever and inflammation present the greatest interest both to the physiologist and pathologist—they enter singly or conjoined, into nearly every condition of disease; primarily or by their results, they lay by far the larger portion of civilized humanity in its grave; they meet us at every turn, and present themselves under nearly every phase; it is no wonder, therefore, that from the earliest days they have engrossed, and still continue to engross so much of the attention of physicians.

Yet these processes are even still mysteries. After all that has been said and written about them, and the innumerable disputations, how little has been reduced to the certainty of science, and what a vast portion of our fancied knowledge still remains hypothesis or conjecture!

Whence the cause? Partly the very difficulty of the subject, and its intimate connection with the processes of life, themselves so little comprehended; and partly because physicians, while yet ignorant of the natural workings of the healthy body, having observed a few more superficial facts of its diseased conditions, have immediately framed hypotheses by which to explain them; when each observer meeting some variances in the facts, and finding some dis-

crepancies in the hypothetical explanations of the others, has thought it necessary to rebuild the whole fabric from the foundation; thus hypothesis has been piled on hypothesis, until the student in sheer bewilderment sides with one or with another, without knowing exactly why, and then declares his party the true faith, and brands all others as heterodox or heretic.

These conditions have many things common to both, as well as peculiar to each. Their very names exhibit one of their connecting circumstances—increased heat; in inflammation this is local, in fever general; the part *inflammat*, the whole *fervet;* they arise also from a common cause, therefore they are seldom met with separately, for inflammation is scarcely ever present without fever, and fever, unless periodic or febricula, is seldom observed free from all inflammation; and indeed several pathologists have declared fever to be an inflamation, some of one organ, some of another. Either one, however, may be the primary or the secondary disease. They differ principally in that inflammation is essentially a local disturbance, while fever is a general derangement—inflammation, while consisting of a nervous as well as a vascular element, is yet more particularly seated in the organic tissue itself, starting from which as a centre, it may implicate the whole frame—so as to have been declared a preverted nutrition; while fever has no local habitation, no fixed point of departure, but from the very commencement seems to be a general disorder of the whole organic functions. In inflammation the peculiar product is an excess of fibrin, in addition to the varied results arising from the affection of different organs; in fever the tendency is to a diminution of the fibrin and of the red corpuscles, the results of a general derangement of the secreting functions being added.

Pathologists have endeavored to condense these processes into that *multum in parvo* a definition; but from their complex nature, this attempt has been generally a failure. Galen described fever as *calor præter naturam*, and Virchow writes,

"fever consists essentially in elevation of temperature, which must arise from increased consumption of tissue, and appears to have its immediate cause in alterations of the nervous system." Copeland had previously written, "that the morbid impression (producing fever) is first made upon the organic or ganglial nervous system, and owing to the circumstances of this system actuating the circulating, secreting, and excreting viscera, is manifested in an especial manner by the changes observed in the state of vascular action, in the animal temperature, in the functions of secretion and excretion, in the circulating fluids, and in the other functions which are more or less intimately dependent upon the ganglial system." Virchow adds, "Every disease may become febrile, every disturbance may form itself into a fever if it extend itself to the centres which regulate the waste of the tissues, and the proper moderating power of the tissue metamorphosis is suspended."

Dr. Southwood Smith observes, "that the order in which the morbid actions, which constitute fever, occur, is first, derangement in the nervous and sensorial functions, this is the invariable antecedent; secondly, derangement in the circulating function; this is the invariable sequent; and thirdly, derangement in the secreting and excreting functions; this is the last result in the succession of morbid changes. Derangement in the functions of secretion and excretion never comes first in the series; derangement in the nervous and sensorial functions never comes last in the series; derangement in the function of circulation never comes either last or first in the series, but always the second in succession."

Inflammation has been defined as increased sensibility and vascularity of a part, with a tendency to morbid secretion, and consequent disorganization. Dr. Bennet defines it as an exudation of the normal liquor sanguinis, and Dr. Alison as a *tendency* to exudation.

In the number of this journal for July, 1860, I traced the histological arrangement of two of the tissues, the muscular

and the osseous, as typical of the whole, to be that of cells in various approximations having one surface in connection with a nutrient vessel of the plasmatic vascular system; both vessel and cell being filled with distinct fluids, which pass from one to the other according to their osmotic conditions; and this interchange of fluids constitutes nutrition. If, therefore, liquor sanguinis osmoses from the vessel it must be into the cell, for the wall of a cell forms a part of the limiting membrane of the vessel. One of two things may happen, the fluid may osmose too largely *into* the cells, causing over-distension of them; or it may remain in the vessels and distend *them;* and in addition to either of these, it may rupture the walls of some vessels and cells, and blend the whole into one confused mass; either of these states, except the first, can be caused only by some sudden impediment to the circulation in vessels nearer the heart, as may arise from sudden contraction of the vessels at the seat of the disorder. Should the engorgement come on gradually, a larger amount of plasma may circulate through the part, and exude largely, or osmose into the cells, but becoming organized, hypertrophy will be the result, or some other structural change, and yet be unattended by inflammation. So also an impediment may gradually arise to the circulation in a part, causing obstruction in, and osmosis from the plasmatic vessels, distending the cells, or perhaps even rupturing some vessel and cell-walls without it becoming organized, and yet be unattended by inflammation, as in some dropsical conditions. It seems to be only that local condition, which is attended by an increased formation of fibrin in the fluids, a loss of the contractile power of its smallest vessels with dilation and engorgement, and an irritated state of its contained nerves which should be considered as inflammation.

The nerve, the vessel, the ultimate tissue element, and the fluids in the part are all unitedly concerned in the production of inflammation, nor can it exist without the implication of them all; no two even of those factors can produce it.

This same histological arrangement, being applied to the term waste of tissue, naturally raises the question, what is the tissue which suffers this increased consumption in fever? If we examine closely the phenomena of nutrition, it can be only the albuminous pabulum of the blood, the similar portions of the cell fluids, the blood-corpuscles, and the adipose deposits in the body, for we have no evidence that the cells, whether muscular, nervous, osseous, or other, are broken up and carried away, but the contrary, unless the forming of fresh Haversian systems in bone be considered such a removal of cells, although it may admit of other explanations. If this increased consumption were a result of a natural or healthy cause, it might be replaced by an increase in the food, as happens in increased exertion, &c., &c.; in fever the increased consumption is accompanied by a diminution of the appetite, and with impairment of the assimilating functions. But while there is an increased consumption, there is no increase in the amount of fibrin contained in the blood, unless some local inflammation be conjoined with it.

We may thus see the important differences between these two processes arising from their elementary composition, and extending through all their relations, treatment, &c., &c. Increased heat is a sympton of both diseases, but its production, as much as that of fibrin, remains an unsettled question; it is chiefly the result of chemical decompositions and oxidations; while the friction of the blood against the vessels may assist in its formation, as also may nervous currents, as is the case with ordinary electricity—however any increase in the quantity of blood circulating through a part will elevate its temperature, and an acceleration of the general circulation is more frequently attended with the same result, if not invariably so—the local increase in the circulation attends always in inflammation, the general as constantly in fever—and to moderate this activity of the circulating system has been a constant desideratum in the treatment of these diseases, whether by venesection, arterial

compression, digitalis, the revived veratrum viride, or indirectly by promoting the evacuations. Inflammation as well as fever may arise from causes originating with the body, as well as those affecting it from without—while particular causes and particular differences in the individual will occasion corresponding differences in the fever or inflammation produced, and thus may arise sporadic cases of those fevers generally contracted by contagion or infection; for in such diseases the *first* case must have originated *suâ sponte;* but in all accelerated circulation and increased heat are constant factors.

Starting from the acknowledged basis, that fever is the result of an effect produced on the nervous system, two methods of treatment have been promulgated; the first is to act directly on the nervous system, and restore its equilibrium; the second is to remove the effete productions until the cause has ceased to operate, or the incited action has expended itself—the first, attempts to cut the fever short; the second, denies this possibility—in the first secernents, in the second stimulants are used as adjuvants; of course the main stay of the treatment being the reverse. And notwithstanding the intrinsic differences between them, the same theory and plan of treatment have been adopted by either party in regard to inflammation.

There are many objections to the general use of the means with which we are at present acquainted, that exert a powerful influence on the nervous system; they do not act on all alike, and they are not always controllable in their action—instance the different effects of morphia, strychnia, digitalis, prussic acid, &c., on different individuals.

The second plan limits the formation of effete matter, counteracts its influence while it remains in the system and constantly promotes its removal.

The first method is exemplified in the cure of periodic fever, where a powerful stimulant taken shortly before the accession of a paroxysm, puts a complete stop to the disease. The second plan, indeed, from its very character of

expectancy, cannot present such a striking example, but by comparing the general results of the two modes of practice in continued fevers and inflammations, they are greatly in favor of the second.

This free use of stimulants is based on the theory that disease arises always from deficiency of nervous force, either direct or indirect; it ignores the fact so strongly, and so continually dwelt on by Copland, that vital manifestations, or the result of vital forces, may be vitiated in kind as well as in degree; It looks only at the force acting, instead also of considering the matter acted upon; and forgets that with an increased tissue change, is an increased amount of effete products, which by their very presence vitiating the blood stream, produce an unhealthy condition of parts previously unaffected, while the very stimulants poured in increasing the products of decomposition, the nervous centres are reacted upon from their peripheries, organs already overworked, or unable to work from congestion receive fresh excitation, and additional local and general disorder are awakened, under which the disease and the patient are terminated together.

One argument raised in favor of alcoholic stimulants in continued fevers and inflammations, is their alleged power of reducing the action of the heart. But the action of the heart is subject to great variations in these diseases spontaneously, it will vary on different days, and even on different parts of the same day: it is, however, difficult to conceive how a stimulant, which as its ordinary results causes acceleration of the heart's action, and increased fullness in the pulse, will reduce the action of the heart while the pulse remains full, and it is not until the pulse has become *soft* as well as *frequent*, as in the latter stages of continued fever and inflammation, that the use of alcoholic stimulants has been found most serviceable.

The blood plasma circulating around every cell in the body, as well as being the vehicle of nutrient matter to them, is also the channel by which effete matter is removed

from them. In a state of health this nutrient matter is derived from a due manufacture of alimentary substances into the albuminous pabulum of the liquor sanguinis; while the effete matter is removed by the secreting and excreting organs. Paralysis of the organic nerves supplying these glandular structures, is followed by a cessation, or at least by a dimunition of their secreting function. The blood stream may pass through them in increased quantity, but the secretion is hindered, and its peculiar constituents retained in the blood. Should this be the case with only one organ, then by the principle of compensation, other organs act vicariously; when, however, the disturbance becomes general, and the secretions of all are hindered, the trouble is increased in such a degree, that life is soon terminated unless they are restored—under the second plan of treatment mentioned above, the object is, from the earliest stages, to promote the action of those organs by which effete matter is expelled, and by abstinence or low diet reduce their work as much as possible. The excreta being capable of division into two classes, the nitrogenous, and the non-nitrogenous, and the chief of the former being urea and uric acid, those remedies which have the most effect in promoting their secretion are of especial value in the treatment of both diseases, especially in their earlier stages, and liquor ammoniæ acetatis, and bicarbonate of potash, or its citrate, have descended to us as heir-looms of great value, although from the researches of Dr. Garrod, lithia and its carbonate appear to possess superior powers to them.

The non-nitrogenous excreta are derived largely from the intestinal canal; but owing to the great tendency to diarrhœa in many of these disorders, and the consequent debility thereby induced, and owing to the fact that the small quantity of food allowable may require longer time than ordinary for its digestion and assimilation, great care must be always observed in the use of purgatives, of which enemata may be in a great majority of instances the better kind; while it is essential that they act, it is also essential that they do

not act too much. In both fever and inflammation the action of the skin may be advantageously promoted. Tepid sponging with alkaline solutions, or with diluted alcohol, will be found very effectual, and contribute much to the ease and comfort of the patient. The pulvis antimonialis comp. of the Pharmacopœia, or James' powder as usually called, is by far the best diaphoretic for general use, and when combined with small doses, one-sixth or one-eighth of a grain of acetate of morphia, a little camphor, and nitrate potash when allowable, will often lull a febrile paroxysm after a few repetitions, and induce a copious diaphoresis; a calm and quiet sleep; a moist tongue, and a general improvement with a gentle increase of all the secretions.

Another remedy much used in both diseases, and in nearly all their stages and kinds, is mercury in one or other of its forms, and no remedy has been so abused by a reckless use, so much so as to have become a by-word and a reproach to the profession. It is usually given in what are termed alterative doses. This term alterative is exceedingly vague; it means everything or nothing, and justifies the saying of Chateaubriand "that words were invented to conceal our thoughts," and our ignorance, it may well be added. An alterative is a remedy which changes the character of the secretions without increasing or diminishing them. But we neither see this effect produced, nor do we expect to see it in the use of mercury in either fever or inflammation. If quicksilver or any of its preparations is digested with solution of chloride of sodium, decomposition ensues, chloride of mercury, *i. e.*, corrosive sublimate is formed, and soda from oxidation of the sodium by atmospheric oxygen, and this process is facilitated by the addition of a little blood; chloride of mercury is soluble in excess of albumen; and the double compounds, chloride of mercury and albumen, with chloride of sodium or with chloride of potassium, present considerable resistance against decomposition by oxygen. The mercury, therefore, passing into

the various cells from the blood stream in these double compounds, as it were, withdraws a large amount of the blood on the one side, and of the tissues on the other, from the action of oxygen as effectually as venesection, while the volume of the blood not being altered, the action of the heart is lessened, having to circulate that amount of unstimulating matter; and the blood itself is at the same time just so much diluted, absorbs so much less oxygen, and is consequently so much less stimulating. There is no necessity in the majority of cases to cause as much mercury to be absorbed as the system will tolerate without disturbance; for it is not until this point is reached that the particular local effects of salivation are produced, and its remedial effects are obtained previously; its approach may be easily recognized, except where the system is very impatient of this mineral; and when we wish to rid the system of it, a rapidly oxidizing agent, as the chlorate of potash, causes its decomposition and discharge.

During the formative stage, or the stage of incubation, any zymosis spreads rapidly through the whole system; while all the excretions being checked, the opportunities for its discharge are more and more lessened; in the inflammatory stage the nitrogenous excreta are increased, and remain above their natural standard as long as this stage lasts, while the chlorides are as constantly diminished, the patient discharging a large excess of nitrogen, over and above that consumed in his food; the carbon and hydrogen excreted not being so easily estimated, but they manifest greatly disordered conditions as evinced by the fetor of the breath, of the stools, and of the sweat. In this stage the circulation becomes greatly accelerated, and the pulse full and bounding, in proportion to the sthenic character of the disease. The connection between this condition of the pulse and the intensity of the disease is so obvious, and the remedy so instantaneous, that blood-letting has been the practice from time immemorial; and in incipient inflammations of a sthenic type under the diminished blood

stream, the pulse will often become soft and compressible, all the secretions will begin to flow, and the patient pass directly into the stage of convalescence. It is only when the case has been of long standing, or the cause of a specific character, or the disease too closely approximating the asthenic or typhoid condition from the first, or too apt to run into it, that bloodletting is inadmissible; but in all inflammations where the vascular element is more involved than the nervous blood-letting—while in the opposite, that is, where the nervous is more involved than the vascular—counter-irritation should be resorted to, and often with considerable freedom. In inflammation of a distant joint, arterial compression in the limb above has been often followed by good effects, the dimunition of the blood stream being in this case confined to the parts affected.

These diseases form an excellent confirmation of the correctness of Liebig's division of food into plastic and respiratory. We observe, and more particularly so in fever, how largely the nitrogenous portions of the body are removed, as evinced by the large excess of nitrogen discharged over and above that contained in the food; and also by the great amount of caloric set free in the system from the secondary decompositions thereby occasioned; while the large quantity of cold water, and often of ice, consumed is but barely sufficient to render the internal heat bearable. The food in these cases is always extremely scanty, for nature has wisely abolished the desire for it, and weak, thin broths, or whey, are generally preferred, and drinks acidulated by some vegetable acid. The carbo-hydrates and fats, more especially the latter, are extremely ill-suited to this condition of things, and if taken are very apt to produce intestinal disturbances. It has been lately objected to Liebig's view, that fat, salts, and water are as essentially components of the tissues as albumen. This objection is very superficial, for all nitrogenous food contains both fat and salt, and the animal substance void of them, gelatin and its allied substances are not, although rich in nitrogen, capable of being

substituted for them. It is not nitrogen that makes *plastic food*, that is not Liebig's point; but that food to be plastic must contain nitrogen. This by no means denies that a body may contain nitrogen, and yet be unfit for food; it only affirms, what no man has yet proved to be false, that animal life cannot be supported on non-nitrogenous food; but may be supported solely on single articles of food, as milk, flesh, bread, and that these articles, besides other things, are very rich in nitrogen; and not only are fever and inflammation in their relations to food, good examples of the truth of Liebig's views, but the more fully these views are understood and carried out by the physician in the treatment of these diseases, and of the periods of convalescence from them, the better will it be for his patients, and the less likely will they be to suffer relapses.

In examining fever or inflammation under general principles, great care should be taken not to select peculiar forms of fever or inflammations of particular organs as types of these diseases in general, by which to guide our treatment of them as a class. No two forms of fever, and inflammations of no two organs, are to be treated on any stereotyped plan; and it may almost be added, no two cases of either disease. Peculiarities of the individual, and of the circumstances are almost infinite, and will cause variations of treatment correspondingly numerous—and the laying down rules for the use of stimulants, or purgatives, or any other remedy, or the disuse of bloodletting as a constant practice in inflammation generally from a special practice in inflammation of a particular organ, or in fever, from a particular epidemic, will tend rather to reduce the practice of medicine to a shallow empiricism, than to extend its rational and scientific foundations, and plant the minds of its students and practitioners on those vito-chemical principles which deal with the body as a material reality, and its changes as real material changes; and when these are unknown will lead them, not to invent hypotheses, but to institute investigations to obtain the facts. The present

in the mind of the observer also, when the disease appears to be arrested. In the second place, the disease appears sometimes to abort of itself; in other words, we meet with cases in which the phenomena attending the forming stage of typhoid fever are present, but the disease does not become fully developed, or if developed, it abruptly ceases and does not go on, irrespective of any measures of treatment.

To obviate the first of these difficulties it has ben proposed to wait until the eruption appears, and not consider the diagnosis as positive until this event occurs. The plan was pursued by Prof. Bennett, of Edinburgh, in testing the views of Dr. Dundas, and he found that the quinia failed in several cases in which he intended to give this remedy a fair trial. But the eruption in typhoid fever does not usually appear until the seventh day after the patient takes his bed, and by this time the disease has advanced nearly halfway through its career. The plan involves too much delay to secure for any measure a fair trial. We must, therefore, base the diagnosis on other circumstances, and make due allowances for a liability to error. In like manner, allowance is to be made for the natural abortion of the disease.

You see, gentlemen, that the question as to the efficacy of any abortive measure is not very easily settled. Great caution is requisite in the collection of facts. The observer must be competent for observation, and be careful as regards the diagnostic character, exclusive of the eruption. His mind must not be warped by undue enthusiasm or credulity, and, unfortunately, we find that not a few persons, who are not wanting in conscientiousness, are apt to see precisely what they desire or expect to witness. If in a considerable number of cases correctly observed, the disease abruptly ends or fails to run its accustomed course in a larger proportion, when certain abortive measures are employed, than when no such measures are tried, we must attribute to these measures more or less efficacy. Now, with regard to the efficacy of any particular remedies I shall not express an opinion in general terms, for I have not formed

over a small space of the upper portion of the posterior lobe of the right lung. Treatment—opium, grs. iv, three times.

Feb. 17. He reports better. Pulse eighty. All the symptoms are improved. The physical signs of solidification continue within the circumscribed space in which they existed yesterday. Treatment continued.

Feb. 18. The patient's mind is still sluggish; he answers questions coherently, but after considerable hesitation. He is now sweating profusely. Pulse sixty; respirations twelve. The abdomen is still somewhat tympanitic, and tenderness in the iliac region continues, but is diminished. Six sore spots, with all the characters of the typhoid eruption, are counted upon the abdomen and chest.

The solidification of lung has not extended, and the signs show that its degree is less. Treatment continued, with an ounce of brandy three times and sustaining diet.

Feb. 19. Improvement is manifest. Pulse fifty-six; respirations twelve. The eruption has disappeared. No diarrhœa. The mind is bright.

No extension of the pneumonia, and the solidification is disappearing. Treatment—the opium is discontinued; the brandy continued and diet as before.

Feb. 20. Convalescence continues and the patient desires to sit up.

Feb. 25. The patient reported well enough to leave the hospital and was discharged.

The career of the fever ended in this case on the seventh day from the time of taking to the bed, the treatment consisting of twelve grains of opium per day, and this treatment continued for three days. The diagnostic characters of typhoid fever were marked, and on one day the characteristic eruption was observed. Did the disease end from an intrinsic limitation, or was it arrested by opium? In answer to this question, I have only to repeat the remarks which were made in connection with the preceding case.

The last case is interesting from the existence of pneu-

monia as a complication, which, like the fever, seemed to be arrested, not extending over the lobe, and rapidly disappearing.

We have thus, gentlemen, reviewed our experience in the management of typhoid fever during the past winter. Three out of four cases have recovered. In the fatal case no abortive measures were employed. In one of the remaining three cases opium and quinia were given in pretty full doses. The duration was fourteen days, and the disease was extremely mild. In the second of these three cases opium and quinia were given, the former in full and the latter in large doses. The duration was eight days, and the course of the disease extremely mild. In the remaining case, opium alone in large doses was given, and the duration was seven days. In the first of these three cases the abortive treatment was commenced on the sixth day of the disease, dating from the time of taking to the bed; in the second and third of the cases the treatment was commenced on the fifth day. In the first case the duration of the disease was eight days after the treatment with quinia and opium was commenced; in the second case the disease continued for three days after the treatment with quinia and opium was commenced, and in the third case the disease ended on the second day after opium was prescribed in large doses.

These three cases, considered alone, are not of great value; but they are valuable as encouraging experimental researches in the same direction, and as a small contribution towards the stock of recorded facts, by means of which it is to be determined whether typhoid fever be amenable to abortive measures of treatment.—*N. O. Medical Times.*

Surgery.

On Perineal Section.

BY J. MASON WARREN, M. D.

One of the Surgeons to the Massachusetts General Hospital.

The distinguished surgeon, Mr. Syme, of Edinboro', has of late years brought more particularly to the notice of the profession the incision of the urethra in the perineum for the purpose of relieving strictures of a bad character. Some confusion seems to exist as to the cases for which this operation is more particularly applicable. So far as we can understand Mr. Syme, his operation appears to be directed to those cases which are permeable to the instrument, yet so irritable and intractable as to be a permanent source of irritation to the patient. Mr. Syme considers that every stricture, with patience, is capable of being penetrated. Other gentlemen, and particularly Mr. Bryant, in an excellent paper in Guy's Hospital Reports, think, there are certain cases of stricture admitted to exist by most surgeons which no patience will overcome, and which the use of the knife alone will remedy. In these he advises, that an instrument should be introduced into the urethra as far as allowed by the obstruction; the finger of the left hand is then introduced into the rectum as a guide to the prostate or neck of the bladder. The integuments now being divided, the knife is introduced with its back towards the rectum so as to strike the urethra in front of the prostate, and a cut is made forwards till it meets the instrument in the urethra.

Mr. Bryant, after mentioning the different forms of stricture requiring this operation, rejects that in which with retention of urine the urethra is impermeable to an instru-

ment; for which case he advises as the only proper operation the puncture of the bladder through the rectum. Without entering upon a discussion as to the merits of the operation, we would simply state, that in our experience this is the very case which most frequently calls for the active interference of the surgeon; and there seems to be no good reason, if the history indicate a callous and incurable stricture as the cause of the retention, why the operation should not be so extended as to divide the stricture at the same time, and give the patient a chance of permanent instead of temporary relief.

In order to illustrate this subject and bring it more fully before the profession I propose, by the exhibition of two or three cases, to show the advantage of the operation in these extreme cases which we are so often obliged to deal with; as it is well known that in permeable strictures, to which Mr. Syme's operation would be applicable, the patient, so long as he could obtain relief otherwise, would be unlikely to submit to a cutting operation. One of these is a case in point with those mentioned by Mr. Bryant, viz., a case of organic stricture of long standing gradually diminishing the calibre of the urethra, and finally terminating in complete retention. In this case, it will be perceived, that instead of puncturing the bladder through the rectum, as would have been the practice of Mr. B., the urethra was cut down upon in the perineum, opened near the neck of the bladder, and then the whole portion of the strictured urethra divided; and a large instrument being introduced the urethra was moulded upon it until a complete cure was produced. The other two cases are those in which the operation of Mr. Syme must have been rejected; as, after much patient treatment in one of them no instrument could be made to enter the bladder, and in the other, although for a time an instrument could pass through the stricture, ultimately this became impracticable, and the patient's life was gradually being exhausted by pain, confinement, and the irritation and discharge from the

numerous fistulous openings in the scrotum and perineum. To Mr. Syme undoubtedly belongs the credit of having fully brought this subject before the profession, and shown the great relief that might be extended to a class of cases allowed to linger on in torment through many years.

In his very valuable paper Mr. Bryant has indicated yet other cases, a class to which the attention of hospital surgeons is much more likely to be called, and of which the preceding are an illustration. We take the liberty of copying Mr. Bryant's conclusions, to which we fully agree, with the exception of the first, upon which we have commented above.

"*Conclusions.*—1. In uncomplicated retention of urine from organic stricture, the operation of opening the urethra in the perineum is not required, the more simple and safe one of puncturing the bladder through the rectum being preferable.

2. When complicated with extravasation of urine from any cause it should be performed at once, and the stricture, when present, divided, if possible.

3. In laceration of the urethra from injury, when a catheter cannot be passed, the urethra should be opened.

4. And also when the above injury is associated with pelvic mischief.

5. Strictures are occasionally met with which are impermeable, and urethras which are obliterated.

6. That in cases of organic stricture, when the passage of a catheter is possible and not difficult; where it does not produce either any injurious, or painful constitutional or local disturbance, and where, after dilatation of the stricture, an occasional passage only of the instrument is required to maintain an open channel, no other surgical means can be called for.

7. That cases of stricture do occur occasionally, which are so exquisitely sensitive, and in which the passage of a catheter, however skilfully performed, is followed by such severe constitutional and local disturbance as to produce

more harm than good; and others, which are relieved by means of a catheter, and are even fully dilated, but which have a tendency to contract again immediately upon the omission of the treatment; in such cases the operation of 'external division' is most valuable.

"8. That the majority of cases of what are called impermeable strictures may be rendered permeable by constitutional treatment, but that some are undoubtedly impermeable; in such cases the operation of 'perineal section' is of value.

"9. When the urethra is obliterated the operation of 'perineal section' may occasionally be demanded, particularly when associated with perineal fistula.

"10. That the worst and most intractable forms of stricture are the result of injury, and in those cases the operation either of 'external division' or 'perineal section' is of great value.

"11. That in boys the operation is not so successful as in adults, although no better can be suggested."

Case 1. *Organic Stricture of the Urethra of Ten Years' Standing; The Urine finally passed in Drops; Retention; Perineal Section; Division of the Stricture; Complete Recovery.*—A. L. Foydt, about thirty years of age, entered the hospital on April 30, 1860, with a stricture of the urethra of ten years' duration. The water, when he entered, passed in a very small stream, and urine was constantly dribbling away from him during the night, accompanied with a purulent discharge. He complained of pain in the renal region, though not of a severe character. After very careful attempts to pass a bougie of the smallest description, it was finally decided to attempt to cut the stricture from within, which was done from a canula with a concealed blade, on May 15, and which, although it cut but partially through the stricture, seemed to afford him temporary relief.

On May 26. the urine became less free; there was considerable dulness in the pubic region, and the patient com-

plained of pain about the bladder, with general uneasiness. I had already made up my mind to perform the perineal section in this case, and ordered the preparations for the operation to be made for the following day.

On visiting him the next day, I found he had a complete retention of urine, and therefore proceeded at once to the operation. The patient was placed on a table, on his back, and after being thoroughly etherized, so that his joints were fully relaxed, he was tied as in the operation for lithotomy. I have found it much better to confine the limbs in this way than to intrust them to the care of assistants, who are apt to be worn out during an operation so likely to be long and tedious. A small staff was introduced, and it seemed to penetrate the first stricture, which as stated above, had been incised about a couple of weeks before, and brought up against a second stricture, apparently just behind the scrotum. The forefinger of the left hand was now introduced into the scrotum, and the situation of the prostate ascertained. The perineum was then divided, and a careful dissection made, to ascertain the site of the urethra. This was rendered very tedious from the constant discharge of blood at the bottom of the deep wound from the bulb of the urethra, which in this case was more than ordinarily troublesome. The urethra, however, was finally opened directly in front of the prostate, and a gum-elastic catheter passed into the bladder, giving exit to a very large collection of urine. The canal was now opened forwards, and the callosities freely divided, until the staff was reached. A second gum-elastic catheter was now passed downwards through the penis until it appeared in the wound; and the ivory end of the first having been cut off, the point of the second was insinuated into it and firmly fixed. In this manner it was dragged up through the whole extent of the urethra. It might be here mentioned, as a hint for finding the urethra, which I have before practised upon, without the staff for a guide, and where other means have failed, to do as was done in the present case—viz, allowing the pa-

tient partially to recover from the ether, stimulate him to make an effort to urinate, and when the urethra behind the stricture became dilated, a minute stream of urine issued, indicating the spot for the introduction of the probe, and the urethra was found. No unpleasant symptoms followed the operation. On the next day the patient expressed himself in a state of great comfort, more so than he had experienced for many years. The sense of fullness, arising from probable distension of the bladder, ureters, and pelves of the kidneys, having entirely passed away. At the end of a week the first catheter was removed, and at once replaced by another, which had been prepared the day before, of the same size and curve. The catheter was found to have been partially acted upon by the urine, and its calibre somewhat obstructed.

At the end of a month the patient was able to introduce the instrument himself; and at the end of two months, the wound in the perineum having nearly healed, he kept it in at night, leaving it out during the day.

He shortly after left the hospital, well, with the exception of a small aperture not larger than a pinhole, and some weeks subsequently presented himself there on the eve of a voyage to sea.

Case II. *Stricture of the Urethra of Twenty-five Years' Duration; numerous Urinary Fistulæ in the Scrotum and Perineum; Perineal Section; Cure.*—E. O. B., shipmaster, entered the Massachusetts General Hospital on April 24, 1860, and gave the following history of himself. He had suffered from gonorrhœa twenty-five years previously, and was treated by his captain at sea by strong injections. The gonorrhœa terminated in gleet, which was treated by bougies for two years, when it was renewed on account of increased obstruction. He then remained pretty well until eight years since, when the strictures became so tight as to give him a great deal of inconvenience, for which he entered the hospital, under my care, and the stricture was divided

by internal incision. This relieved the urinary trouble, and for a time he enjoyed good health. Two years since a fistulous opening appeared in the perineum; four months later another in the scrotum; five months since a third; through these openings parulent matter with urine was freely discharged. The whole of the scrotum was tense, indurated, and barred by sinuses. Two months previous to his admission a No. 1 bougie was passed into the bladder, after much effort; his symptoms have been aggravated by it.

I passed a No. 1 bougie down to the stricture, and kept it applied for two or three hours daily, exerting a gentle pressure against the stricture. After treatment for about a week in this way, the stricture gave way, and the instrument passed into the bladder.

On May 1, I made an incision into one of the scrotal openings, and gave vent to a quantity of purulent matter mixed with urine. Notwithstanding the passage of the bougie, the symptoms of trouble about the scrotum increased, and towards the 1st of June, the stricture having again closed, so that it was quite impossible to pass any instrument, the operation was done, at his request, on June 4.

The patient being etherized, and confined in the position for lithotomy, Syme's sound was passed through one stricture, and encountered a second. An incision was now made in the median line of the perineum, and dissection performed until the point of the staff was reached. The tissues were much hardened, and infiltrated by a deposit, which greatly opposed the progress of the knife. The flow of blood from these diseased parts interfered much with the operation; the perineum also was uncommonly deep. In order the better to bring the continuation of the urethra beyond the stricture into view, the end of the staff was turned out through the incision, and served to hook up and thus bring the deeper parts more fully in sight. The wound being freely sponged with iced water, a puncture was made into the supposed urethra, in the neighborhood of the neck of the bladder, which allowed the passage of a probe into

that organ; and the urine having escaped, showing it had gone in the right direction, a large gum-elastic catheter was substituted for the probe. A sharp-pointed knife was now passed up by the side of a small Syme's sound, and the first stricture, which lay behind the middle of the scrotum, and which would not allow anything larger than the sound to pass, freely divided.

A second gum-elastic catheter was now introduced through the glans and urethra, insinuated into the mouth of the first, which remained in the bladder, and was thus drawn upwards as in the former case.

No great constitutional irritation followed the operation, and the patient on the following day described the comfort of freeing the bladder by a large stream, after having suffered for so many years in his efforts to do so, as beyond belief. The first bougie was left in place a week, then becoming obstructed, it was replaced by another, and this was done weekly through the course of the treatment. The wound in the perineum, on account of the diseased state of the tissues, was very slow in healing, and the patient remained in the hospital for two months afterwards.

A communication was received from him in Nov. 1860, in which he states that he was well.

Case III. *Traumatic Stricture of the Urethra of Five Years' Duration.*—G. U., 36 years of age, a teamster, came into the hospital under my care in the early part of the spring of 1860. He said that five years before he had been jammed against a wall by the buffer of a freight car with such force as to produce a rupture of the urethra. He remained in a critical situation for a time, and had never since been able to pass his water, except in a very small stream. Two years previous to his admission, a fistula appeared near the tuber ischii of the left side, between that and the rectum. His water has passed by drops through this fistula, and another in the rectum, ever since. Various attempts have

been made to perforate the stricture, but all of them without avail.

On examination by the rectum I found that the bladder, intestine, and surrounding parts were glued together and involved in an indurated mass, and the calibre of the intestine was very much diminished. A probe being introduced into the fistula by the side of the rectum, passed up by the side of the gut through these indurated tissues, and apparently entered the interior of the bladder. Having made very careful attempts for a time to get through the stricture by gentle means, I finally advised him, unless willing to have the perineal section performed, to desist from any further efforts, for fear of producing irritation and complete retention, especially as he did not suffer much from his disease.

In June, having heard of the success of two of the above operations, he came back to the hospital for the purpose of having one performed upon himself.

Operation.—A sound was passed down as far as the stricture, an incision made upon it, and its point reached deep in the perineum. No traces of the urethra beyond could be discovered by the most careful manipulation. He was, therefore, allowed to recover partially from the effects of the ether, and to make an effort to void his urine. An incision was now made in the direction of the neck of the bladder, and a female catheter introduced as a guide, which was replaced by a No. 8 elastic catheter. The parts were very vascular, and the steps of the operation, which lasted over an hour, much obscured by blood.

Not the slightest unfavorable symptom followed: but at the end of the week, when it was necessary to replace the catheter, it was found to be a matter of much difficulty to do so, the end of the instrument escaping into the rectum. This was, however, finally effected both at that time, and afterwards, by hooking the beak of the instrument against the pubes, and then, instead of trying to force it forwards, the handle was suddenly depressed, and it slipped into the

bladder. Carried forwards in the ordinary way, it always went into the rectum.

On the 27th, it was recorded that all the urine was discharged by the catheter, although there was purulent discharge through the fistulous opening near the rectum, and occasionally from the rectum itself. The patient remained in the hospital rather more than two months, when he left, and has since been seen well.—*Am. Jour. Med. Sciences.*

Obstetrics.

On the Treatment of Uterine Inflammation by Nitrate of Silver and other Substitutive Agents.

BY E. J. TILT, M. D., M.R.C.P.

In using these agents, we only apply the general principles of therapeutics to the treatment of inflammatory affections of the womb and its associated organs. The utility of a solution of acetate of lead in inflammatory affections of the skin implies similar utility in inflammatory affections of the vaginal mucous membrane; the utility of solutions of borax and of chlorate of potash in affections of the mouth pointed to their trial as vaginal injections; the utility of sulphate of zinc and nitrate of silver in urethral strictures demonstrated by J. Hunter, Sir E. Home, Lallemand, &c., suggested their employment in uterine catarrh; the sovereign utility of the solid nitrate of silver for the cure of cutaneous ulcerations caused it to be tried in ulcerations of the womb. To whatever mucous membrane

these agents are applied, they act in the same way—they substitute a therapeutical irritation, susceptible of being graduated to a morbid irritation, which might uncontrollably compromise the structures attacked—a temporary irritation to one that tends to become permanent.

In treating of injections, I have already enumerated several agents which act in this way, such as borax, chlorate of potash, acetate of lead, alum, sulphate of zinc, &c. They are generally given largely diluted, but if used in a solid or highly concentrated state, the action of these agents would be analogous to that of two other important agents, nitrate of silver and tincture of iodine, which are called caustics by courtesy, but are no more caustics than tincture of cantharides. I wish it to be clearly understood that I hold these agents sufficient for the surgical treatment of uterine inflammatory diseases in the large majority of cases, and so does Dr. H. Bennett, although it has been stated that we use strong caustics in ordinary cases of uterine disease. In a comparatively small number of instances, the structures of the womb have been too deeply modified by inflammation or by hypertrophy, and are in so low a state of vitality, that the above-named agents are insufficient to bring about a cure of the disease. Then I have recourse to another class of substitutive agents, which are undoubted escharotics, for they cause a loss of substance proportionate to the amount of caustic used. Those caustics induce healthy acute inflammation in the tissues underlying the eschar, and, by judicious management of this healthy inflammatory action, the cure of chronic cases is often induced.

The caustics of which I shall treat are, the acid nitrate of mercury, potassa fusa cum calce, potassa caustica, and the actual cautery. At first sight it may seem strange to class together sulphate of zinc and potassa fusa cum calce, but one is justified in doing so, because the substitutive action which I ascribe to a solution of sulphate of zinc is pre-eminently shown in the results of potassa fusa cum

calce, which often so raises the vital endowments of the uterine tissues as to promote rapidly healthy nutritive action in tissues which had been diseased for many years.

Such is my mode of practice, and I am glad to find that it accords to a certain extent with the practice of all whose opinion carries weight, and who, having in vain tried to cure uterine diseases by nitrate of silver or milder measures, have recourse to one or the other of the strongest caustics. Dr. Fleetwood Churchill depends on nitric and muriatic acids, and on the acid nitrate of mercury, which is also preferred by Dr. E. Kennedy and by Dr. West; and although this distinguished pathologist considers ulceration of the cervix to be a condition of slight pathological importance, when he has to trace out a plan of treatment for his pupils, he has none other to propose than that already long ago carefully laid down by Dr. H. Bennet. The late Dr. Rigby, though adverse to the surgical treatment of uterine affections, admitted that there were certain cases of uterine ulceration requiring the use of potassa fusa, or potassa fusa cum calce. Dr. H. Bennett prefers potassa fusa cum calce. This is not energetic enough for Professor Simpson, who uses potassa caustica; while the French strongly advocate a remedy older than Hippocrates, the actual cautery.

These comments upon the treatment of uterine inflammation will show that I am an eclectic, and that I use all the valuable agents which I have enumerated in certain cases which I shall specify. Again reminding the reader that I am not writing a treatise, I shall proceed to comment on the use of our principal substitutive agents.

Tincture of Iodine.—It is the ordinary tincture of the Pharmacopœia which I mean, not the caustic tincture. I shall be brief on this agent, having already mentioned it as a revulsive, and having compared it with others then under discussion. Tincture of iodine seems to act as an astringent when slightly applied to the hypertrophied or inflamed surface of the neck of the womb, but as a vesicant

if several applications are made at one and the same time, and as a resolutive if re-applied every third or fourth day. It is much less useful than nitrate of silver as a topical application, but it suits better some idiosyncracies, and is well borne in diphtheritical inflammation, when nitrate of silver should not be used. The fact that a solution of iodine can be injected into closed cavities and fistulous passages without severely inflaming them, marks it out as the best liquid to be injected into the body of the womb, in the very rare cases requiring such treatment; for it has less frequently given rise to the alarming symptoms of peritonitis, which have very often followed the intra-urine injection of a solution of nitrate of silver. I use one drachm of the tincture to an ounce of distilled water, and inject it by means of an instrument similar to that devised by Mr. Coxeter for injecting fluids into the larynx.

Nitrate of Silver.—"The application of nitrate of silver is a means, under certain circumstances, of subduing external inflammation. Might it not, on this principle, be of service in the treatment of the internal phlegmasia?" Such was the question asked by Mr. Higginbottom in the preface of his admirable little work on "The Lunar Caustic," published in 1826. His question has been answered in the affirmative by a great many practitioners, who have applied nitrate of silver for the cure of inflammatory affections of the mucous membrane of the eyes, ears, mouth, throat, urethra, the intestines and the rectum. As regards the mucous membrane of the genital organs, Dr. Jewel, in 1830, strongly advocated its use; and I have no hesitation in saying that this great agent is quite as useful in curing the varied inflammatory conditions of the genital organs as in curing those of the skin. It is often necessary to preface the use of nitrate of silver by linseed tea, poppy-head, or other cooling injections, in the same way that Mr. Higginbottom repeatedly inculcates the utility of cold poultices previous to applying nitrate of silver to the inflamed skin. If, after antiphlogistic treatment, the solid

nitrate of silver increases too much habitual pains, or causes the ulcerated surface to bleed for two or three days afterwards, it is well to try a solution of from forty to sixty grains of nitrate of silver to an ounce of distilled water. In many cases the solution is sufficient to effect a cure; it gives less pain, but it may be necessary to repeat it every third or fourth day. Sometimes I use a solution of nitrate of silver containing one ounce to the salt of two or three ounces of distilled water, as an application to ulcerated surfaces. Chronic uterine catarrh, or inflammation of the mucous membrane lining the neck of the womb, which has been truly called an open gland pouring out mucus from ten thousand follicles, seems to me the most frequent of all uterine diseases. Without having the slightest abrasion, the mucous membrane lining the neck of the womb and its vaginal surface may be of a dusky, livid hue, tender on being touched, and secreting pus. This condition may last for years, but it generally leads to more or less extensive denundation of the villi of the uterine mucous membrane, and gives an excoriated appearance to the neck of the womb. Such cases, with or without excoriation, can be cured by the nitrate of silver in solution, and every fourth or fifth day, with the occasional use of the solid nitrate. If the mucous membrane lining the cervix be principally affected, it is often so obstinate as to render the painting of it with the solution little use. The solid nitrate must be freely employed, and when the cervical canal is unusually dilated, I sometimes leave about one-eighth of an inch in the canal; by which it will be clear that, so far as my experience goes, should the stick accidentally break in the cervical canal it need give no alarm. What cannot be removed will cause more pain, some loss of blood, and perhaps even a return of menstruation; but the patient may be repaid for greater suffering by a speedier cure. It has been stated by Nonat that this mode of treatment has caused stricture of the uterine canal in his practice and in that of Richet. I have never met with this accident,

and I think its occurrence is to be prevented by the occasional passage of the uterine sound for a few weeks after this severe application.

With regard to the treatment of the various forms of ulceration of the neck of the womb, I can add nothing to what has been so well laid down in Dr. H. Bennet's work. Mr. Higginbottom, whose statements with respect to the action of nitrate of silver deserve the highest consideration, affirms that its action does not extend beyond three days after its application; and it is generally received that it is necessary to repeat the use of this agent so soon as the epithelial pellicle has fallen off, or every third or fourth day. In many instances this is the best way of ensuring the most rapid recovery; but I do not recommend the too strict adherence to this precept, as it is often well to leave five, six, or seven days' interval between the applications, or we might work as did Penelope, and retard the cure of the case. This, however, is a matter of surgical experience in each individual case.

Whether vaginitis occurs spontaneously or as the result of uterine catarrh, it is best cured by the injection of a solution of nitrate of silver. This is an excellent idea of Dr. Jewel, but if the solution be sufficiently strong to do good it cannot be safely trusted to the patient. The patient being placed on her back, a small glass speculum should be introduced as far as possible, and an ordinary glass syringe full of a solution of nitrate of silver, containing forty grains to the ounce, should be injected. The speculum should then be withdrawn to the vicinity of the vulva, and the fluid should be left in contact for three or five minutes, after which the speculum is to be withdrawn, and the fluid received in a small cup. Sometimes I apply a speculum of appropriate size, and as I withdraw it I pretty freely touch the vagina with the solid nitrate of silver, diluted by chloride of silver, as prepared by Mr. Squire. This is a modification of a plan recommended by Ricord.

I recommend these injections where there is evidence of inflammation of the womb, with excoriations of its cervix; in virgins in whom the integrity of the hymen prevents the introduction of a moderate-sized speculum. This plan should be first tried before forcibly dilating or incising the hymen—an operation which is very rarely required. I have frequently made these injections in many cases, and I do not once remember having traced menorrhagia to their administration. I mention this as it seems to have often occurred in the practice of Dr. Fleetwood Churchill. So many serious accidents have followed the injection of the solution of nitrate of silver into the body of the womb, that I prefer using tincture of iodine in solution whenever intra-uterine injections may be required. In very rare cases of chronic internal metritis it may even be necessary to apply the solid nitrate of silver to the internal surface of the body of the womb, as well as to adopt other modes of treatment, for an account of which I refer the reader to my papers on the Treatment of Internal Metritis.*

In follicular inflammation of the labia in eczema and prurigo pudendum, or pruritus both external and vaginal, a piece of cotton wool should be soaked in the solution of nitrate of silver, and carefully rubbed for two or three minutes over the diseased portions of the skin and mucous membrane. I can speak with confidence of this plan, for I have lately cured several patients who had been suffering in this way for four, eight, and thirty years. When cases have lasted so long the pudendal skin looks and feels like parchment. It was so in the case of a lady in whom the disease had lasted thirty years, and I first rubbed in the solution every day, then every other day, then every fourth and fifth day, until the skin became soft and pliable, and the sleep was no longer disturbed by darts of pain flashing along the nerves. This patient was cured in three months, and has had no relapse during the last year.

*The Lancet, 1853, vol. ii.

I trust I have said enough in praise of nitrate of silver; but in many forms of uterine inflammation much more severe agents are required to restore the womb to a healthy state. This fact is admitted by so many authorities at home, in America, or in foreign countries, that I am surprised to find the contrary asserted by Dr. Meigs and Dr. Tyler Smith. After describing the evil effects of caustics in the treatment of uterine disease, the latter pathologist, in his work on "Leucorrhœa," (p. 203), gives as his opinion that "there is no good which can be effected by the more powerful caustics which cannot be accomplished by the nitrate of silver, or by other means. It is true that by the prolonged application of the nitrate of silver loss of substance may be caused; but this is far less likely to occur with lunar caustic than the more powerful escharotics. It is also true, that some practitioners apply the more violent caustics so lightly that they do not exceed the milder medical action of the solid nitrate of silver: but in such cases it would be quite as well to use the safer remedy where a caustic is required." And at p. 206, "In applying the nitrate of silver, the aim should be not to produce any slough or loss of substance." Thus it is clearly stated that the slight application of the strong caustics is tantamount to the full action of the nitrate of silver in like cases of uterine disease.

My experience, on the contrary, teaches me that nitrate of silver is no more a caustic than tincture of cantharides, as Mr. Higginbottom has long ago asserted. The distinction that Dr. Meigs draws between the antiphlogistic touches and the escharotic action of nitrate of silver, does not bear examination. Use it as you may the nitrate of silver does not cauterize. Leave it in the neck of the womb, it will cause more pain, loss of blood, and subsequent discharge, but no destruction of tissue, unless coagulated mucus mixed up with ephithelial scales and insoluble chlorides of silver can be called such. Even when applied to a fungous ulcer, the slight loss of substance is rather due to the friction of a

hard body on a pulpy than to the chemical combination of the neutral salt and the diseased tissues. A densely hypertrophied neck of the womb might be whitened with the solid nitrate of silver every fourth day until doomsday, without much reducing its bulk. Indeed I have seen such a plan of treatment injudiciously continued for a year or longer in a case of hysteralgia, the neck of the womb being healthy and of an average size, and the effects were rather astringent than caustic, condensing the tissues, narrowing the cervical canal, and rendering its dilatation necessary and difficult. Thus, while nitrate of silver may be repeatedly applied without inducing a loss of substance, the slightest application of the potassa fusa to the neck of the womb produces an evident loss of substance; and, therefore, the two agents, however applied, produce totally different effects in similar cases. This is a question of surgical therapeutics which can be decided by any experienced surgeon. Writing on the treatment of stricture caused by gristly thickening of the urethral mucous membrane, Mr. Wade records his twenty-five years' experience of the comparative advantages of nitrate of silver and of potassa fusa, and he states: "I cannot let this opportunity pass without again calling attention to the fact, that the effects of the argentum nitratum and of the potassa fusa admit of no comparison, as they are totally dissimilar; that the former, when freely used, from its tendency to cause adhesive inflammation, has often been found to increase the urethral obstruction, whilst the remarkably solvent powers of the latter have no such tendency."*

The too free use of the nitrate of silver to the inodular tissues of the urethra causes urethral stricture, as the too free use of the same agent to the cervical canal causes stricture of the neck of the womb, but without loss of substance. Indeed, if the whole range of diseases in which nitrate of silver is now used be passed in review, it will be found that it

*Wade, Stricture of the Urethra, 4th Edit., p. 117.

always acts by its dynamic, astringent, and antiphlogistic properties; whereas escharotics can only raise the standard of vitality of any given tissues by the previous destruction of their superposed surface. I maintain, on the contrary, that there is one good to be done with the more powerful caustics which cannot be accomplished by the nitrate of silver; that is, to shorten the treatment of many cases in which it is *at first*, judicious to try it. Ulceration of the neck of the womb, on a hypertrophic basis, may doubtless be sometimes cured by the use of the nitrate of silver, but the treatment might be indefinitely prolonged; whereas it can be very much shortened by one or two applications of the acid nitrate of mercury or of potassa fusa c. calce. When the inner cervix is chronically inflamed, nitrate of silver may enable us to effect a cure; but with that agent, however applied, cures are sometimes so tedious that it is well to resort to one or two applications of the acid nitrate of mercury or of potassa fusa c. calce. In fungous and varicose ulceration the nitrate of silver causes the surfaces to bleed profusely, and does more harm than good; whereas I find that in these cases the acid nitrate of mercury and the actual cautery stop the bleeding and promote a cure. I think it right to be sparing of caustics to the neck of the womb in pregnant patients: but I have seen cases similar to those described by Dr. Bennet in which it was necessary to stop an abundant purulent and bloody discharge from a large varicose ulcer, and I have done so with the acid nitrate of mercury after doing more harm than good with the nitrate of silver. So little are caustic agents and nitrate of silver interchangeable substances or therapeutical equivalents, that I find nitrate of silver in some cases to be positively poisonous, while potassa fusa c. calce conduces to recovery. In diphtheric inflammation of the neck of the womb and of the vagina, nitrate of silver acts as a poison. In a case now under treatment there is a small patch of false membrane on the posterior lip of the os uteri, and around it are numerous ulcerations. Were I to touch them with

nitrate of silver they would soon be covered with false membranes. Tincture of iodine would not produce this effect, neither would the potassa fusa c. calce; these, therefore, are the best means of curing this most tedious complaint, of which I have seen two instances and Dr. Bennet three, and he would endorse what I affirm of such cases. Occasionally we meet with cases like two I am now attending, in which an extensive superficial excoriation of the neck of the womb bleeds profusely, and for the following two days, even when only touched with the solution of nitrate of silver, which likewise makes the sore more angry. In these cases I have nearly effected a cure by dressing the wound with tincture of iodine or the acid nitrate of mercury.

The profession is more and more convinced of the great utility of caustics in many diseases; were it otherwise, surgery would be deprived of a valuable remedy, and the obstetric art robbed of the only means of curing the most distressing cases of uterine inflammation. Patients would thus have to drag on from year to year their weary load of misery, with the only hope that the cessation of menstruation, by putting an end to the physiological liability of the womb, might also check its liability to inflammation.—*London Lancet.*

The Value of Anæsthetic Aid in Midwifery.

Dr. Kidd read before the Obstetrical Society of London, December 5, 1860, a paper on this subject. In obstetric practice, the instances where the author has found the inhalation of ether or chloroform to be called for in an especial degree, and where anæsthetic aid has proved decidedly useful, have been cases of version, forceps, twins, convulsions, and crochet operations. He has known chloroform used in puerperal mania, but its apparent effect is perhaps a coincidence, and not of a curative nature. The author referred the society to his previous work on *Anæsthetics*, where the result of 360 cases of midwifery treated under ether, and 1,700 under chloroform, without accident from fatty heart, are described. Of these two agents (though there have been twenty-five deaths from ether in general surgery,) he believes ether is superior to chloroform in relaxing rigid perineum in labour, and otherwise acting on the muscles of the uterus, in version cases particularly. There have been no accidents from chloroform in about 30,000 cases of midwifery conducted with the aid of these agents. The mode of applying chloroform in the lying-in chamber recommended was that which is adopted now by all the chief obstetric practitioners in Europe and America with whom the author has personally communicated on the subject. In midwifery practice, the error of using "mixtures" of ether and chloroform was explained, as a patient supposed to be inhaling a mixture is in reality inhaling pure ether, and there is a danger of confusion arising in mistaking one anæsthetic for the other. A new anæsthetic of chloroform and ergot mixed was also mentioned. Cases of twins, where the second child presents with an upper extremity, "the pains severe and continuous, so that it is next to impossible for the accoucheur to introduce his hand to turn the child," were first described, where chloroform is invaluable, if there be no contraindication of diseased

heart, etc. The several indications in undilated os uteri for tartar emetic, liquor opii, or chloroform, from the result in actual practice, were explained. Next those cases of twins were pointed out where at one particular stage it is judicious to allow an interval of rest to the uterus; here ammonia and ergot act like a charm; not that chloroform is injurious, but it requires to be given before or after ergot, and not at the same time. The author said that if in journals half the attention were given in fact to these points that is given to quack compounds of chloroform, all would be right. As in some cases of twins, so is it in some cases of "tedious labour;" the patient requires an interval of rest to renew reflex action, and remove the effect of exhaustion, "false pains," emotions of a depressing kind, sleeplessness, etc. Thus, an inexperienced or constitutionally delicate young woman, with her first or second child, becomes alarmed, sleepless, etc., during her labour. Some indigestion, diarrhœa, or fright has hastened her labour before its time. The first stage of labour has been attended with suffering, followed by fatigue. Here the pains are ineffectual in advancing the labour; but if there be no diseased heart or other contraindication to anæsthetics, the author strongly advocates their administration in the manner pointed out in the memoir.

How does sleep during labor differ from anæsthesia? Sleep, according to the author, occurs only where there is exhaustion of sensorial or muscular power; anæsthesia is best where there is no exhaustion; it is independent of sleep. The reflex power of Marshall Hall is the frontier or limiting line between sleep and anæsthesia; in sleep it is active, in anæsthesia absent. In tedious labor the agony and pain will not permit the poor woman to sleep. Even opium is followed but by a tedious intoxication, without sleep, for hours; but chloroform is not an intoxicant, and acts at once and quite as safely. A patient in ordinary anæsthesia may be said to be doubly asleep. This is what is wanted for a short time in this class of labours, as thus

reflex, sensorial and muscular power are renewed. Emotion also is removed out of the way by chloroform sleep; and by a confident, cheerful demeanor on the part of the accoucheur, he may effect as much in two or three hours by chloroform as he might in almost as many days by delay, and opium, and waiting for nature. Cases of versional delivery, with and without chloroform, were next minutely described and compared; cases especially of excessive sensibility of the os uteri and vagina, where the waters have long come away, and the uterus has closed with spasmodic force over the fœtal hand and arm. One well-known obstetrician has had 300 cases; and he is every year more and more satisfied with the aid afforded by chloroform. The value of versional delivery and its *rationale* were also enlarged upon, as well as the much to be desiderated probability of the abolishing of craniotomy, and of many cases where the forceps is unnecessarily and cruelly resorted to at present. Next to version cases, the usefulness of chloroform in forceps patients was explained, and directions given as to the mode of administration. Chloroform in abortion cases at the fifth or sixth month as advocated by Dr. Tyler Smith, was also dwelt on; and even in cases of placenta prævia, as administered by Professor Simpson, Denham and others. Chloroform, as facilitating delivery by means of version, has been tried with advantage to anticipate hemorrhage. Ammonia or brandy is first given, chloroform then administered, the feet brought down, and the remainder left to nature as the chloroform wears off. The treatment of particular forms of puerperal convulsion by chloroform was entered into and explained, especially its usefulness in that form common in poor unmarried women—convulsions the consequence of mental emotion, or epileptic excitement; but in the class of cases tending towards, or the result of apoplexy, and those with albuminuria, the use of chloroform or opium must be somewhat secondary, Dr. Kidd thinks, to the general treatment and general relief of the congested cerebral or spinal membranes. The

author is not favorable to the use of anæsthetics in the simple hysteric varieties of the disease, hysteria being generally one of the contraindications to the administration of chloroform. The law of tolerance of chloroform in midwifery, is not unlike that of the tolerance of ammonia, steel, bark, wine, opium, etc. All these medicines are of exceeding value where there is present shock of the nervous rather than to the vascular system. Chloroform is invaluable where there is exhaustion, debility, or shock, the result of great or long-continued pain; where there is loss of nerve force, or convulsions from excess of reflex irritability or pain, or mental emotion or excitement, etc. But chloroform is of less importance, as even wine, bark, iron ammonia, etc., are of less use, where there is exhaustion, the result of hemorrhage, hectic, diarrhœa, exhausting suppuration, etc. Such diseases as chorea, asthma, hooping-cough, tetanus (not unlike puerperal convulsions,) are blotted out by chloroform, no matter how apparently weak the patient may seem; but it is different with debility from hemorrhage or diarrhœa. The author's further experience of chloroform, in operation cases of craniotomy, vesico-vaginal fistula, ovariotomy, enucleation of uterine tumors, etc,, in which he has administered it largely, was, in conclusion, recited.

In the discussion which followed the reading of this paper, Dr. Gream said that, from some observations which had been made, it might be inferred that chloroform was but little used in midwifery in London; but he was sure that in no place was it more extensively employed, and he could positively state that amongst the upper classes it was almost universally employed, but with a general feeling of abhorrence of anything like intense insensibility. Surprise had been expressed by Dr. Barnes at the statement that so large a number of cases had occurred in which chloroform had been used in midwifery without accident; but there appeared to be no difficulty in understanding this, for it should be remembered that it was never right, nor was it required,

to carry insensibility so far as in surgery; and he (Dr. Gream) was sure that all the fatality which had attended the exhibition of chloroform in midwifery had arisen from some little want of care, or from a want of appreciation of its power. When anæsthesia was first introduced, he had opposed, with others, the indiscriminate use of it, for he thought that at that time it was recklessly employed; and he believed that the present safe and efficient manner in which it was exhibited in London was the result, in a great measure, of the opposition offered to its former indiscreet and dangerous employment. It was a fact that no death from chloroform in midwifery had occurred in London; but allusions having been made to two authorities "beyond the Tweed," it was right to state that there the same immunity from calamity had not been enjoyed; yet he felt sure that no agent could be more safe, and none more beneficial, than chloroform in midwifery, when properly administered. He thought the author of the paper had unintentionally exaggerated the ill effects (if there were any,) and also the good effects, of chloroform. For three reasons, he (Dr. Gream) thought chloroform most beneficial in labour; it removed pain, it rendered turning more easy, and it facilitated recovery; while the only detrimental effect was in protracted labour with pelvic contractions, where, by lengthening the intervals between the uterine pains, and slightly diminishing uterine power, it might cause delay; but its advantages in all other respects made full recompense for this one drawback. In instrumental delivery of every kind it was most advantageous, and he had seen fewer cases of hemorrhage since he employed chloroform; indeed, he had exhibited it to patients who had habitually been subject to this occurrence, without hemorrhage supervening—a fact worthy the attention of theorists, but nevertheless a fact. Each person had his own way of administering chloroform. He had tried several plans, but of late years he had employed a common tumbler, in which he placed the chloroform, together with a clean pocket-hand-

kerchief moistened with about two drachms of the fluid. This quantity ought to last two hours or more. The patient's face projected over the side of the pillow, and the nurse or the husband (strictly under his direction) placed the tumbler under her nose and mouth, at a distance of about an inch and a half or two inches, and thus the vapour rose perpendicularly towards her. She soon expressed a sense of giddiness; but the tumbler was still retained, until there was nearly an inability to answer any simple question put to her, and that should be the point beyond which no advance should be made. The chloroform should be now removed, and be replaced in a few minutes; and by thus being replaced and removed from time to time, while the pulse is felt and the respiration watched, a labour might be conducted through its stages without danger and without pain. He had never, during the number of years he had used chloroform, had one moment's anxiety as to its effect upon any patient to whom he had administered it. The object of the handkerchief in the tumbler was to prevent any chloroform from running out or escaping on the bed if the tumbler fell over. He had found that any handkerchief or machine with which it was necessary to touch the face had the effect of rousing the patient, and thus did harm.

Dr. Druitt said that he believed there were very few labours in which chloroform might not be used with benefit at some stage or other; and that even when all the earlier stages go on easily and well, it is the greatest comfort at the final moment when the head emerges from the outlet. He did not believe that the chloroform predisposed to hemorrhage; on the contrary he knew women who had flooded severely in early labours, when they had no chloroform, and who had been confined under chloroform subsequently without hemorrhage. Neither does it seem to retard uterine action after the first inhalation or two, provided that it be used in the small doses which reason dictates; nay, it removes that obstacle to uterine action which

is created by excessive sensitiveness of the orifice and passages, and which causes uterine action to be abortive. He knew a case in which, after a very slight inhalation—enough to tranquilize, but not stupefy—the head was driven through, with rupture of the perineum, that external sensitiveness having been allayed which is a bar to uterine action. In cases of protracted labour from rigidity, such as happen to robust women who marry rather late in life, the blessing of chloroform was incalculable. These were the cases formerly treated by bleeding, tartar-emetic, and opium; and, in opposition to the author, both opium and emetic tartar, in minute doses, were admirable adjuvants in the proper cases. No amount of torture equalled that which many women endured from excessive uterine action and quasi-inflammatory rigidity of the os, and chloroform agreed well with any other proper remedy that might be devised. The only reservation he would make was, that chloroform should be used in the minutest quantity and the minutest quantity sufficed. Two drachms were enough in most labours, a few drops at a time, to imitate the normal condition of labour; that is, a short snatch of refreshing sleep at the end of every contraction, and a little drowsiness beyond. He had met with two cases in which a very small quantity of chloform produced symptoms of angina pectoris in women whose hearts were weak, and in such cases he thought that the risk ought not to be run.

Mr. Tyler Smith agreed with nearly all that had fallen from the previous speakers in favor of chloroform in obstetric practice. He thought that it might be laid down as a principle in regard to its employment that, besides its value in allaying pain, it was useful in all cases, especially in operative midwifery, where it was desirable to moderate excessive action of the uterus, and to promote dilatation and relaxation. He held, on the other hand, that it was contraindicated in cases where there was deficient action of the uterus—as in feeble and tardy labour from inertia, and in cases where hemorrhage was expected. He had seen it

stop the course of labour midway, and he believed that post-partum hemorrhage and retention of the placenta occurred more frequently after its use than without it. One good effect of the discussion on the present paper lay in the difference of opinion which had been elicited. The causes of these differences would be studied, and the truth brought out. It could not possibly be correct that chloroform relaxed the uterus so as to facilitate turning, and made it contract so as to increase the difficulties of this operation; or that it could both cause and prevent hemorrhage. He had himself no doubt of its usefulness in difficult cases of turning. He had met with cases in which version had been accomplished by its aid, where without it the operation would have been utterly impossible. He had seen mania follow its employment, and he thought that in some cases the relation was that of cause and effect. He had also met with bad cases of rupture of the perineum under its use. The patients were relieved from pain, but volition was not suspended, and under these circumstances the violent and fearless straining efforts ploughed up the perineum by the fœtal head in the expulsive pains. It was of very great consequence to lessen, as far as possible, the dangers attending the use of this great and beneficent agent. The influence of fatty heart, alcoholism, and other conditions, in fatal cases, had been much debated; but there was one source of danger which, so far as he was aware, had not been dwelt upon. He referred to idiosyncrasy. He had known patients affected to a poisonous extent by ordinary doses of ether or chloroform. He knew two ladies, in apparently good health, in whom a few drops of chloroform would at any time produce repeated fainting. He suspected, therefore, that some of the inexplicable cases of death from chloroform depended on idiosyncrasy, and, before its administration, it would be useful if patients were tested as to their tolerance of its effects.—*Medical Times and Gazette.*

Reviews and Editorial.

Under the head of Reviews we have nothing to send forth to the patrons of the North Carolina Medical Journal. The chances of war have cut off our usual supply of Books and Monographs and exchanges from the north; while Bookmaking and even Journalizing at the South have been abandoned for the more stirring realities and sterner necessities of the times. Those among us accustomed to use the graceful, sharp nibbed pen, or to speak in flowing sentences of science, art and literature, have, at their country's call to arms, hastened to the tented field, prepared for the fierce conflict and shock of armed men, determined to do or die in defence of all that is held dear and honorable among men; while the gentler sex, God bless them, whether mothers, wives, daughters or sisters, have engaged systematically in what may be called emphatically *labors of love*, to encourage and comfort the armed men who have so suddenly rushed to the field of battle. Their instinctive perceptions of virtue and angelic sympathies led them to discern the *truth and justice* of our cause, and *faithfully* to hope for its ultimate triumph, long before many of our leading men, by their slow philosophic and more selfish processes of elaboration *could realize its rightful proportions or determine its probable results.* Such are the southern women, "*holy, divine, good, amiable and sweet;*" beings who are working with unparalleled devotion, systematically preparing, collecting and forwarding clothing, hospital dresses and other stores and supplies for the sick and wounded of our army. Like the Spartan mothers of old, they encourage their fathers, husbands, sons and brothers to hasten to the defence of their country's liberties. Can the rights and honor of such a people perish in the conflict? No, never; for never before

was there such an army sent to the field—never one urged on by such noble impulses of patriotism, and inspirited by such soul-stirring and holy considerations of duty! *Such a cause cannot, because it must not, fail!*

The preparations for war during the short period that has elapsed since hostilities broke out, are incredible in extent and completeness. Every class, profession and trade is animated by one patriotic impulse, to defend our altars and maintain our rights and our honor at every hazzard of fortune and of life. The medical profession contributes liberally, and of its best material to make up this army. In some instances medical men are chosen commanders of companies. In others we find them in the ranks doing the duties of privates, when they are fully capable of discharging those of Surgeons and assistant Surgeons. Most, perhaps all of those in the ranks, made application for the situation of surgeon or assistant surgeon, thinking they could render more effective service to the State in the line of their profession, than in the character of a common soldier. In coming to this conclusion they were doubtless correct. But then all could not be either surgeons or assistant surgeons. There were more applicants than places to be filled, and of course some must fail. But we have yet to learn of the first man among them, who afterwards flinched from the discharge of his duties as a common soldier, notwithstanding they are more capable of using gracefully either a scalpel or a pen, than they are of handling a musket. This speaks volumes in praise of their patriotism, their pluck and their powers of endurance. We have heard it said in disparagement of the profession that there was a complete Regiment, in numbers, of Doctors applying for commissions in the army. This may be true; but if so, it is no discredit to the profession since it has occurred in the manner, and been followed by the consequences, already mentioned. In proof of it, we hazzard the assertion that there is in every Regiment formed and equipped for service, more Doctors in the ranks as common

soldiers, with Diplomas in their pockets, than there are commissioned surgeons. Can this be said of other professions, or even of any one of the mechanic arts, where the members of it are cultivated and intelligent persons? No, it cannot; and never since the crusades of the middle ages, has any *class* been inspired with such enthusiastic devotion to a holy cause. We know of several instances where physicians have quit, for a surgeons place in our army, professional employment worth two or three times as much as their new position. And again, we know other physicians in the same ranks, who possess so much mental calibre, and are made of such pure metal that they will be sure to inscribe their names high in the temple of fame, should the war last long and the opportunity offer. Yet Mr. President Davis has thought proper to discredit the pretensions of our medical men to be fit *custodians* of the lives and limbs of our army. "Your Doctors," he says, "may be very good country physicians; but they are unfit for army surgeons." And thereupon, he claims the right to appoint surgeons to our Regiments, notwithstanding their officers are appointed by our Governor under a special law of our legislature, and notwithstanding also, by special appointment they are made Regimental and not staff officers, thus placing them upon the same footing with the other regimental officers, and constituting them a portion of the Regimental organization, which by the laws of the land belongs to the State authorities. He has, therefore, in our judgment, assumed a power he has no authority to exercise; and we shall presently show that he has underrated the value and patriotism of the medical mind of North Carolina. Indeed, we regard either view of this subject, as derogatory to the dignity and honor of North Carolina, prejudicial to her best interest as a sovereign State, in utter disregard of the rights and patriotic impulses of an intelligent and valuable class of her citizens, and in plain violation of a late law of the General Assembly of the State in this case made and provided, and of the Constitution of the Confederate States.

The late lamented Marshal Hall is reported to have said, after visiting this country, if he was compelled to undertake an expedition by land or sea, and had to depend on one medical man for relief under such circumstances from all the ills that flesh is heir to, he would take an intelligent, cultivated medical gentleman from one of the small towns or villages in the southern States. He would not treat you, in pure matters of surgery, as well or dexterously as Sir Benjamin Brodie, Mr. Liston or Surgeon Guthrie; nor would he in obstetrical cases prove to be quite as *au fait* as Ramsbotham, Lee or Blondel; nor perhaps so learned on the subject of the theory and practice of medicine as Watson, Stokes or Lyons; but he would treat you well and very generally with success, no matter what was the matter with you, and certainly with more success than either of those gentlemen would, save in his own special branches. This was truthful and sagacious, and we believe he might have added, that, as practitioners of medicine, in the treatment of fevers and their kindred affections, as found in our country, they would prove to have no superiors among the Stoke's, Watson's and Lyons', or any of the learned professors of the theory and practice of medicine in the Northern schools. Hundreds of cultivated and intelligent physicians in North Carolina belong to this class of men. They have had to do surgery and practice obstetrics as well as medicine during the whole of their professional life, and most of them of fifteen years standing have seen and done more surgery than the army surgeons in this country of equal years, and certainly more than any of the younger ones. Yet our Doctors are unfit for army surgeons! Credat Judeus apella; non ego.

We have had four complete Regiments in the field for weeks past, composed in no small degree of men from the high, hilly and mountainous portions of our State, which are stationed in the paludal or tide water districts of Virginia, and we have not averaged a loss of one in a thousand from the diseases incident to camp and hospital life.

We have also had for weeks more than fifteen thousand troops in the different camps of instruction in the State, and so far we have not averaged one death in two thousand, notwithstanding it is a well ascertained fact that much the greater portion of the mortality of armies belongs to hospital and camp life, and does not result from wounds received in battle. We will not say there has not been a great deal of sickness among our soldiers; for such an assertion would be untrue. But we do say, without the fear of contradiction, that we have enjoyed most extraordinary exemption from mortality, under circumstances where it might reasonably have been expected. Our army is made up of the best material in the world. Men accustomed to all the comforts and conveniences of life, have gone into this movement with alacrity, and fare as the common soldier. This necessarily changes their habits entirely, and subjects them to the evils of a soldiers life, just in the proportion of the change in their mode of living as compared with the habits of those men who generally compose armies. Lyons, Pathologist in chief to the British army in the Crimea, and professor of the theory and practice of medicine in Dublin, says: "It is in the midst of war's mingled triumphs and alarms when the pride of the insulted honor of nations, or the love of conquest pits against each other the flower of their youth on the battle field that disease and preeminently febrile disease makes most havoc. To take no other example, I should be justified in saying, that considerably more than half of the whole of the deaths of that splendid army of three hundred thousand men which France supplied in the late Russian war, was caused by fever or diseases secondary to fever." He further says, that from the 1st of Sept. 1854, to April 1855, there perished in the hospitals of Scutari alone 4,228 men; and that out of these, only 358 died of wounds. Thus the subject of the theory and practice of medicine, as properly belonging to the army, becomes a matter of serious reflection, both with those of our profession who have sought and obtained the

responsible office of army surgeon, and with those who exercise the appointing power. "'Tis not all" of a surgeon's duty to amputate a limb and tie up an artery. We have known of one instance and heard of another in our State, where a plain but intelligent farmer took off a leg above the knee with a spanish windlass, a carving knife, handsaw and a knitting needle sharpened and bent at the end, and the *patient* got well without a bad symptom. Thus, while surgery in its strict technical sense is necessary, still the acquirements of the physician are more so, and will be oftener called into requisition.

Hear what this same Lyons, Crimean surgeon and Dublin professor, says about army surgeons. He thinks "a few months" experience will enable "a junior assistant surgeon to wield the knife with all the skill, the dexterity, and the firmness of a practised operator;" but that "nothing can supplement the want of an early and systematic training in the pathology and therapeutics of fever." Now our medical men are familiar with all the diseases of the Southern States, with the pathology and therapeutics of "*fever or diseases secondary to fever*," which is proven by their ability to conduct *Twenty Thousand Troops* through many weeks of hospital and camp life, under an ardent Southern sun, without losing *one in a thousand.* Therefore, it must be admitted, *a fortiori*, that they are well fitted to be army surgeons, at least for our troops, maugre the opinion of our good President, who is without doubt a wise Statesman and a perfect thunderbolt of war, but, as we happen to know beyond a doubt, *rather a poor judge of Doctors.*

Our position as a member of the State Medical Society and member of the Board of Medical Examiners for the State, as Editor of the North Carolina Medical Journal and Surgeon General of the military forces of North Carolina makes it our bounden duty to defend the medical men of North Carolina against unmerited disparagement whencesoever it comes, and to place their professional qualifications for the places of surgeons and assistant surgeons in our army, and their patriotic impulses as loyal sons of the

South and citizens of this State, in a proper point of view. In this article we have aimed at nothing more, and we could not conscientiously do less.

Eheu jam satis! the reader exclaims. But read on. There is another interest of paramount importance involved in the consideration of this question of Regimental organization of our troops. What is the great foundation principle that underlies this whole Southern movement? that has hurried thousands upon thousands of armed men to the field of battle? that has made almost every man and boy in the land a soldier? Is it not States rights? We have certainly so understood it. Then let all the constituted authorities of the State see to it, that the political rights and civil liberties of the people are not sacrificed to what may be considered the pressing necessities of the times, and the *urgent requirements of the moment*, by suffering the State to drift into the Briarean arms of the man on Horseback.

Excerpta.

Whooping Cough.—For this disease, Dr. Benson, of the Louisville *Journal* recommends the following:

℞.—Acid Hydrocyan.	gtt. vi.
Ext. Belladonna.	grs. ii.
Tinct. Opii Camph.	ʒ iij.
Syr. Bals. Tolu.	ʒ ij.
Aquæ Font.	ʒ iij.

Misce. S. One teaspoonful four times a day.

Strychnine in Typhoid Fever.—Prof. N. S. Davis, of Chicago, advocates the use of this remedy: particularly so, in cases having a tendency to rapid prostration. The following is the combination in which it was given:

℞.—Strychnine,	gr. i.
Nitric Acid,	ʒ i.
Tr. Opii,	ʒ ij.
Water,	ʒ ij.

A teaspoonful to be given every hour.

Chlorate of Potassa in Gonorrhœa.—Dr. Irwin, U. S. A., in the *Medical and Surgical Reporter*, in speaking of the use of this remedy, says, "I have found it to be such an admirable remedy that I seldom resort to any other in the treatment of urethral inflammation. My method of using it is as follows: one drachm of the salt dissolved in eight ounces of water, of which an injection is given every hour for twelve hours, at the end of which time, the discharge will have become changed and diminished, allowing the remedy to be gradually discontinued until the second or third day, when the disease will be generally found to have ceased."

Glycerine as a solvent for Belladonna.—M. Foucher recommends this solvent, instead of water, for the purpose of applying it around the brow to produce dilatation of the pupil. The extract is thus prevented from drying into a hard crust, and a greater certainty of absorption of the narcotic is insured.

(This would also be a good form for applying belladonna to the breast for the purpose of arresting the secretion of milk—one or two drachms of belladonna rubbed up in an ounce of glycerine and smeared over the breast: the addition of thirty or forty grains of camphor would be beneficial.—Eds. St. Louis Med. & Surg. Jour.)

Physicians in the United States.—According to the Nashville Medical Journal, the number of physicians in the United States (as heretofore comprised) amounts to 40,481. In North Carolina there is one physician to 802 inhabitants. This fact may be of interest to recent graduates.

How to Improve the Taste of Cod Liver and Castor Oils.—The Louisville Medical News says: "Cod-Liver or Castor Oil, shaken up with an equal volume of water distilled from the leaves of the wild cherry tree, in a manner similar to that directed for cherry laurel water, and left to rest for forty-eight hours before separation, acquires by this simple operation an extremely sweet perfume and agreeable taste

of almonds; the taste remains so long as the digestion lasts. Castor oil is not affected in its purgative action by this process."

Dyspepsia.—The Medical and Surgical Reporter gives the following prescription used by Prof. Pepper with advantage as a carminative, &c., in dyspepsia: ℞. Creasote, gtts. x. Sodæ Carb. ʒ ij. Tr. Zingiber, ʒ i. Tr. Cardamon, ʒ i. Sacchar. Alb. ʒ ij. Aqua Cinnamon, ʒ vi. Dose. A teaspoonful three or four times a day.

Dysentery.—Dr. Jackson in the Boston Journal recommends the following formula for dysentery:

℞—Glauber salts. ʒ i.
Water, ʒ iij.
Nitric acid,
Muriatic acid, *aa.* ʒ i.
Alum, ℈ ss.

M. S. A large tablespoonful occasionally.

A Pathognomonic symptom of Scarlatina.—Dr. Bourchut, points out a curious sign which assists in the discrimination of scarlatina from measles, erythema, erysipelas, etc. It consists in a vascular phenomenon, proportionate in intensity to the extreme contractibility of the capillaries; he refers to the enduring *white stripe* produced at will by drawing the back of the nail over the part of the skin in which the eruption exists. Pressure with the nail, or any other hard substance upon the exanthematous surface, produces a white streak which lasts one or two minutes, and sometimes more. This phenomenon (an uninterrupted white streak) is observable in scarlatina only.

MINUTES

OF THE

TWELFTH ANNUAL MEETING

OF

THE N. C. STATE MEDICAL SOCIETY.

HELD AT

MORGANTON, N. C., MAY, 1861.

MORGANTON,
May 8th, 1861.

The Medical Society of the State of North Carolina held its twelfth annual meeting in the town of Morganton. The President, Secretary and Treasurer being absent, Dr. J. J. Summerell, the first Vice President, took the chair and called the Society to order. Dr. W. H. McKee was appointed Secretary, and Dr. J. Graham Tull, Treasurer, pro tem.

The following permanent members were present: Drs. J. H. Dickson, J. G. Tull, W. H. McKee, C. Happoldt, O. F. Manson, J. J. Summerell, R. L. Payne, W. R. Sharp, J. M. Happoldt, W. A. Collett, Hugh Kelly. Drs. Sharp, Manson and Kelly were appointed a committee on Credentials, and reported the following gentlemen as permanent members of the Society:

Dr. W. W. Gaither,
" W. C. Tate,
" H. R. Curtis,
" R. C. Pearson,
" P. A. Barrier,
" J. C. Gidney,
Dr. H. W. Tate,
" Calhoun Hill,
" J. T. Fuller,
" J. M. Lowing,
" R. A. Shinpock.

It was ordered that the members who were just elected permanent members of the Society should sign a copy of

the Constitution and By-Laws, and have their names transferred to the Journal by the Secretary on the book containing the same, as it was not present. They then came forward and signed a copy of the Constitution and By-Laws as required.

The following members were elected a committee on nominations: Drs. Tull, Manson, Dickson, J. M. Happoldt, Kelly, Hill, Gaither, Sharp, Payne, and Curtis. The committee on nominations submitted the following report:

For President,
Dr. J. T. SUMMERELL, of Salisbury.

For Vice Presidents,
Dr. J. M. HAPPOLDT, of Morganton.
" W. R. SHARP, of Davie,
" J. B. HUGHES, of New Bern,
" R. L. PAYNE, of Lexington.

For Secretary,
Dr. W. G. THOMAS, of Wilmington.

For Treasurer,
Dr. C. W. GRAHAM, of Kenansville.

For Orator,
Dr. M. WHITEHEAD, of Salisbury.

The committee declined to nominate members to the American Medical Association.

Respectfully submitted,
J. G. TULL, *Chairman.*

Adjourned until 9 o'clock, A. M.

MORGANTON,
May 9th, 1861.

The Society met according to adjournment. When the President, elect, Dr. Summerell returned his acknowledgments to the Society for the compliment paid him in being

selected as their presiding officer for the next year, and still pledged his devotion to its farther aid, in promoting its future success.

The members were called upon for reports from their respective counties. Dr. C. Happoldt read an interesting report from the county of Burke, which elicited an elaborate discussion from the physicians of his county. Dr. R. L. Payne, of Davidson county, also read a paper on the diseases of his county, giving quite in detail the various accounts of the epidemics and treatment of the diseases, as well as the changes which occurred under his immediate observations during the last year. Dr. Kelly, of Iredell, made a report upon diphtheria, as it prevailed in the immediate neighborhood of Statesville. Dr. Sharp of Davie also reported upon the thermal changes which had taken place for the last four years in his county, and requested an expression of opinion relative to the causes of those changes and the effect produced upon the type of disease as now existed from that of former years. Dr. J. M. Happoldt, of Morganton, entertained the Society with an interesting case of vernal asthma, as it prevailed annually in his own person. This, with the other reports, were ordered to be published in the Medical Journal.

Dr. McKee introduced the following resolution, which was unanimously passed.

Resolved, That the Treasurer of this Society be instructed to pay over to the Editors of the North Carolina Medical Journal, such sums of money which he may have in his hands, from time to time, after defraying the ordinary expenses of the society, so as to enable them to carry on its publication—provided, that the Journal should not be able to sustain itself, and that the Editors are authorized to draw the same upon their statement; and that the assessment for the present year be two dollars upon each permanent member and county society.

The President made the following appointments to report on the epidemics and diseases of their respective counties at the next meeting of the Society.

COUNTIES.	NAMES.
Burke,	Dr. C. Happoldt.
Craven,	" J. B. Hughes.
Washington,	" J. L. F. Long,
Edgecombe,	" J. W. Jones.
Pitt,	" C. J. O'Hagan.
Warren,	" Frank Patterson.
Wilson,	" W. J. Bullock.
Hertford,	" J. W. Hutchings,
Davie,	" W. R. Sharp.
Iredell,	" W. M. Campbell.
Rowan,	" J. G. Ramsay.
Anson,	" E. F. Ashe.
Cleaveland,	" Thos. Williams.
Cabarrus,	" L. S. Bingham.
Davidson,	" R. L. Beall.
Guilford,	" J. K. Hall.
Randolph,	" W. H. H. Conner.
Montgomery,	" R. A. Shinpock.
Mecklenburg,	" J. W. Caldwell,
Catawba,	" H. R. Curtis.
Halifax,	" A. R. Pierce.
Tyrrell,	" G. W. Hodges.
Franklin,	" W. C. Lankford.
Richmond,	" O. Hadley.
Chowan,	" R. H. Winborne.
Pasquotank,	" J. M. Butt.
Camden,	" R. B. Tabb.
Perquimans,	" David Cox.
Gates,	" J. F. Manning.
Orange,	" Wm. Strudwick.
Wake,	" B. F. Graham.
Duplin,	" H. W. Faison.
Sampson,	" Thos. J. Boykin.
Granville,	" Eugene Grissom.
Wayne,	" Chas. Dewey.
Lenoir.	" J. Bryant.

COUNTIES.	NAMES.
New Hanover,	Dr. W. H. Hall.
Beaufort,	" Wm. Cramer.
Greene,	" Ira Scarboro.
Johnston,	" John S. Leach.
Currituck,	" L. M. Bell.

The President, in behalf of the physicians of Morganton, extended an invitation to the members of the Society to a party to be given at night at the Mountain House.

On motion of Dr. Manson, the invitation was accepted, and the thanks of the Society returned.

Invitations to hold the next Annual meeting of the Society were presented by several members. The one from Wilmington was unanimously accepted.

The President appointed the following gentlemen as a Committee of arrangements:

Dr. W. G. Thomas,	Dr. W. W. Harris,
" J. H. Dickson,	" E. A. Anderson,
" W. H. Hall,	" A. Medway.
" J. F. McRee, jr.	

On motion of Dr.Manson, the usual resolutions of thanks were passed presenting to the President and Directors of the different Railroad companies, for their courtesy in passing at half price, the members of the Society who were in attendance upon the meeting; also to the Committee of Arrangements, the members of the profession, and the citizens of Morganton, for the hospitality and agreeable attentions shown to the members during the annual meeting.

It was ordered that the minutes of the proceedings of the Society be published in the Medical Journal.

On motion, the Society adjourned to meet in the town of Wilmington, on the second Wednesday in May, 1862.

J. J. Summerell, *President.*

W. H. McKee, *Secretary pro. tem.*

CONSTITUTION

OF THE

MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA,

As amended at its eleventh Annual Meeting, April 1860.

ARTICLE I.— *Title of the Society.*

The title of the Society shall be "The Medical Society of the State of North Carolina."

ARTICLE II.—*The Objects of the Society.*

The objects of this Society shall be the advancement of medical knowledge, the elevation of professional character, and the promotion of all measures of a professional nature that are adapted to the relief of suffering humanity, and to improve the health and protect the lives of the community.

ARTICLE III.—*Members of the Society.*

SEC. 1. This Society shall consist of Permanent Members, Delegates, Associates, and Honorary Members.

SEC. 2. The Permanent Members shall consist of such regular Physicians as shall be admitted on motion of a Member: *Provided*, he receives two-thirds of the votes present; and the Member thus admitted shall be entitled to all the privileges of the Society. He must first sign the Constitution and By-Laws, and pay the assessment.

SEC. 3. The Delegates shall receive their appointment from the County Societies, and from the Counties that have no Society a delegate may be appointed by the Profession of the County: *Provided*, they have as many as two regular Practitioners within the County.

SEC. 4. Every Delegate, before admission to a seat in the Society, shall produce a certificate of delegation, signed by the President or Secretary of the County Society or Association, and shall sign the Constitution and pay the assessment.

SEC. 5. Each Delegate shall hold his appointment for one year, or until another is appointed to succeed him.

SEC. 6. Every member of a County Society shall be an associate member of the State Medical Society.

SEC. 7. An associate member shall be entitled to all the privileges of attending upon the deliberations of the Society, and take part in its discussions, but shall not be allowed to vote, nor shall he be eligible to office.

ARTICLE IV —*Of the Officers.*

SEC. 1. The officers of this Society shall be a President, four Vice Presidents, a Corresponding and Recording Secretary, and Treasurer.

SEC. 2. At each annual meeting the Society shall elect by ballot one member from each County represented, who shall constitute a Committee on nominations, whose duty it shall be to nominate the officers of the Society, delegates to the American Medical Association, orator and honorary members, and report the same for the action of the Society.

SEC. 3. The report of the said Committee shall be decided by vote, *viva voce*, and the officers, delegates, and orator so elected, shall serve for one year, or until others are elected to succeed them.

SEC. 4. None but permanent members and delegates shall be eligible to the office of President, Vice President, Secretary and Treasurer.

ARTICLE V.—*Duties of the Officers.*

SEC. 1. The President shall preside at the meeting, preserve order, and perform such other duties as custom and parliamentary usage may require. He shall not be eligible for two terms in succession.

SEC. 2. The Vice Presidents, when called upon, shall assist the President in the performance of his duties, and during the absence, and at the request of the President, one of them shall officiate in his place. They shall not be eligible for two terms in succession.

SEC. 3. The Corresponding and Recording Secretary shall conduct the correspondence, and perform such other duties as usually appertain to that office; and shall keep correct minutes of the proceedings of the Society, and shall fairly transcribe the same, when approved, in a book kept for that purpose. He shall have charge of all papers belonging to the Society, other than those appertaining to the Treasurer; and shall give due notice of the annual meetings; and shall receive such compensation as the Society may from year to year determine.

SEC. 4. The Treasurer shall receive all moneys belonging to the Society, and give receipts for all sums paid into his hands to the individual paying the same, and disburse them as directed, preserving vouchers for the same. He shall annually present a statement of the finances to the Society, which shall be referred to a committee of three delegates, to be audited.

ARTICLE VI.—*Of the County Societies.*

SEC. 4. The members of the profession in any County of this State, who form themselves into a County Society, may become auxiliary to this Society: *Provided*, That all the regular practitioners in the County have been invited to unite in its organization; *and*,

provided, that the constitution and laws of such Society do not contravene those of the State Society.

SEC. 2. No one shall be admitted as a member of the County Society, unless he is either a graduate in medicine of some respectable Medical School, or has been a practitioner for at least five years; and who, moreover, is in good moral and professional standing in the place where he resides, and is a regular practitioner.

SEC. 3. Any physician who shall procure a patent for a remedy, or instrument of surgery, or who shall hereafter give a certificate in favor of a patent remedy, or instrument, shall be deemed disqualified from becoming a member of a County Society.

SEC. 4. As soon as the County Society is organized, the Secretary thereof shall transmit to the Corresponding and Recording Secretary one copy of the Constitution and By-Laws, with the names of their officers and members. The Society shall be authorized to elect one delegate to the State Society for every five of its members.

SEC. 5. Every County Society shall enforce the observance by its members of the Code of Ethics adopted by the State Society, and they shall be authorized to censure or expel any member convicted of violating its provisions.

SEC. 6. A member of the County Society who is censured or expelled, shall have a right to appeal to the State Society.

SEC. 7. A member who is expelled, shall be debarred from the rights of consultation, or the privileges of professional intercourse with any member of the State Society.

SEC. 8. The County Societies shall report annually to the State Society a list of their officers and members, any new rules which they may adopt, and such other matters as they may deem interesting.

SEC. 9. The County Society shall hold at least two meetings in each year.

SEC. 10. If any County Medical Society shall neglect to perform all such acts as may be required to be done by the laws of the State Society, or shall be guilty of conduct derogatory to the honor of the Medical profession, or shall oppose or neglect to comply with the laws of the State Society, such county shall during such delinquency, have their privileges, as a portion of the State Society suspended, and their delegates shall not be entitled to a seat in the State Society.

ARTICLE VII.—*Meeting of the Society.*

The Society shall hold an Annual Meeting. The time and place of meeting shall be determined, for each succeeding year, by a vote of the Society.

ARTICLE VIII.—*Of the Funds of the Society.*

SEC. 1. Funds for defraying the current expenses of the Society shall be raised by assessments on permanent members and County or District Societies in connection with the State Society.

SEC. 2. Each permanent member, after being duly elected and having signed the Constitution, shall pay the sum of five dollars as an admission fee, and subject to the annual assessment of the Society, with the exception of the assessment for the year of his admission.

SEC. 3. Should a permanent member fail to pay the assessments two successive years, after having been notified by the Treasurer of his delinquencies, his name shall be stricken from the list of members.

SEC. 4. Each County or District Society shall pay, through the hands of its Delegate or Delegates, the annual assessment; and in case such County or District Society is not represented, it shall be the duty of the Treasurer to forward an account of said assessment to the Secretary or Treasurer of the County or District Society for collection.

SEC. 5. Should a County or District Society, in connection with this Society, fail to pay the annual assessment two successive years, after having been notified by the Treasurer of its delinquencies, its right of representation in this Society shall be suspended until said assessments are paid.

ARTICLE IX.—*Code of Ethics.*

This Society adopts, as a part of its regulations, that part of the Code of Ethics of the American Medical Association, which it has published by its order,

ARTICLE X.—*Provisions for Amendments.*

Every proposal for altering or amending this Constitution shall be made in writing; and if such alteration or amendment receives the unanimous vote of the members present, it shall be adopted; but, if objections be made, the alteration or amendment shall lie over until the next annual meeting, when, if it receives the vote of two-thirds of the voters present, it shall be adopted.

RULES OF ORDER.

1. The President, or in his absence, the Vice President, shall call the Society to order; or in case of the absence of all these officers, a Chairman shall be appointed, *pro tem.*, for the purpose.
2. The appointment of a Committee to examine the Credentials of Delegates.
3. The Report of the above named committee.
4. Calling the Roll.
5. Election of Officers.
6. Resolutions introducing new business.
7. Reading the Minutes.
8. Any business which requires early consideration may, by permission, be introduced.
9. Reports from the County Societies.
10. The Correspondence shall be read by the Corresponding Secretary.
11. Written Communications on Medical subjects may be read and discussed.
12. Oral Communications may be made and discussed.
13. Tha selection of a place for the next meeting of the Society.
14. Unfinished and Miscellaneous business.
15. Adjournment.

LIST OF MEMBERS OF THE NORTH CAROLINA MEDICAL SOCIETY.

NO.	NAMES.	WHERE BORN.		MEDICAL SCHOOL.	PRESENT RESIDENCE.		DATE OF SIGNING.
1	Dr. E. Strudwick,	Orange county,	N. C.	University of Pennsylvania,	Hillsboro'	N. C.	April 3d, 1850
2	" J. D. Williamson,	Caswell "	"	" " "	Locust Hill,	"	" " "
3	" W. H. McKee,	Raleigh,	"	" " "	Raleigh,	"	" " "
4	" William G. Hill,	"	"	" " "	"	"	" " "
6	" N. J. Pittman,	Halifax county,	"	" " "	Rocky Mount,	"	" " "
6	" T. H. Turner,	Orange "	"	Jefferson Medical College,	Hillsboro',	"	" " "
7	" W. A. Norwood, (L.)	" "	"	Charleston " "			" " "
8	" Johnson B. Jones,	Chatham "	"	" " "	Chapel Hill,	"	" " "
9	" R. B. Haywood,	Raleigh,	"	Jefferson Medical College,	Raleigh,	"	" " "
10	" William Webb,						
11	" F; J. Haywood,						
12	" N. L. Stith, (L)						
13	" David A. Telfair,						
14	" A. H. Taylor,*						
15	" L. C. Manly,						
16	" C. E. Johnson,						
17	" Henry Seawell,*	Wake county,	"	University of Pennsylvania,	Wake County,	"	April 4th, 1850
18	" James B. Dunn,	Forestville,	"	" "	Forestville,	"	" " "
19	" W. H. Crenshaw,						
20	" J. J. W. Tucker,*	Raleigh,	"	University of Pennsylvania,	Raleigh,	"	April 3d, 1850
21	" Jas. A. McRae,	Fayetteville,	"	" New York,	Fayetteville,	"	" " "
22	" Wm. Geo. Thomas,	Louisburg	"	" Pennsylvania,	Wilmington,	"	" " "
23	" N. Mendenhall,						
24	" H. W. Graham,						
25	" O. Hooker,	Greene county,	"	University of Pennsylvania,	Hillsboro',	"	April 3d, 1850
26	" S. S. Satchwell,	Beaufort "	"	" New York,	Rocky Point,	"	" " "
27	" John R. Mercer,	Edgecomb "	"	University of Pennsylvania,	Edgecombe Co.,	"	" " "
28	" P. T. Henry,	Bertie "	"	" New York,	Windsor,	"	" " "

LIST OF MEMBERS.—CONTINUED.

NO.	NAMES.	WHERE BORN.	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
29	Dr. John Q. Anderson,	Caswell, N. C.	University of Pennsylvania,	Caswell County,	April 3d, 1850
30	C. F. Dewey,	Raleigh,	" "	Goldsboro',	" "
31	P. P. Peace,	Granville County,	" "		" "
32	E. B. Haywood,	Raleigh,	" "	Raleigh,	April 1850
33	J. R. Thompson,	"	" "	Smithfield,	" "
34	L. A. Jeffreys,°	Wake County,	" "	Franklin,	" "
35	J. M. Taylor,	Nash,	" "	Stanhope,	April 3d, 1850
36	Robert Gibbon,	Pennsylvania,	Jefferson Medical College,	Charlotte,	" "
37	Wm. M. Broocks,	Charlotte, Va.,	" " "	Milton,	April 4th, 1850
38	J. F. McRee, Jr.,	Wilmington,	University of New York,	Wilmington,	" "
39	J. G. B. Myers,	Beaufort Connty,	" Pennsylvania,	Washington,	" "
40	T. N. Cameron,*	Petersburg, Va.,	" "	Fayetteville,	" "
41	Jno. T. Hicks,	Wake County,	" "	Fish Dam,	May 22d, 1851
42	E. H. Crudup,	Franklin County,	" "	Franklin Co.	" "
43	J. B. Mann,	" "	Jefferson Medical College,	"	" "
44	J. L. Meares, (L.)	Wilmington,	" " "	Mississippi,	" "
45	B. C. Watson, (L.)	Philadelphia Co., Pa.	University of Pennsylvania,		" "
46	L. D. Schoolfield,	Guilford,	" New York,	Hillsboro',	" "
47	J. D. Battle,*	Franklin,	" Pennsylvania,	Everettsville,	" "
48	W. R. Miller,	Raleigh,	Jefferson Medical College,	Wake County,	" "
49	J. M. Johnston,	Yanceyville,	University of Pennsylvania,	Yanceyville,	" 12th, 1852
50	James P. Bryan,	Newberne,	" "	Kinston,	" "
51	A. B. Pierce,	Halifax County,	" "	Halifax,	" "
52	A. D. Moore, (L.)	Chatham "	" New York,		" "
53	J. Graham Tull,	Lenoir "	" Pennsylvania,	Newberne,	" "
54	Henry W. Faison,	Duplin,	" "	Duplin County,	" "
55	Elias F. Shaw,	Sampson,	" "	Sampson County,	" "
56	Robert H. Tate,	New Hanover,	Jefferson Medical College	New Hanover,	" "

LIST OF MEMBERS.—CONTINUED.

NO.	NAMES.	WHERE BORN.	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
57	Dr. Allmand Holmes,	Sampson	University of Pennsylvania,	Sampson County N C	May 12th, 1852.
58	Thomas J. Boykin,	"	" "	Clinton,	do
59	L. Frink,	Brunswick	" "	Brunswick County	do
60	Elias K. Faison,*	Sampson	" "	Duplin county	do
61	B. F. Whitaker,	Halifax	Jefferson Medical College	Enfield	do
62	D. DuPree, Jr.	Wake	University of Pennsylvania	Raleigh	do
63	John Swann,	New Hanover	Charleston Medical College	Wilmington	do
64	S. T. Iredell,	Raleigh	University of Pennsylvania	Raleigh	do
65	J. W. Hutchings,	Hertford County	" "	Murfreesboro'	do
66	William L Long,*	Halifax	" "	Weldon	do
67	Henry Joyner,	"	" "	Halifax County	do
68	Owen Hadley,	Chatham	" New York	Richmond County	do
69	William H. Moore,	"	" "	Chapel Hill	do
70	W. W. Harriss.	Wilmington	" "	Wilmington	do
71	Thomas Woodley,	Isle of Wight, Va.	University of Pennsylvania	Kinston	do
72	James H. Dickson,	Wilmington,	" New York	Wilmington	do
73	W. G. Curtis,	Hopkinton. N. H.	Harvard University	Smithville	do
74	E. A. Anderson,	Wilmington,	Yale College	Wilmington	do
75	D. B. Gillespie,	Bladen county,	Charleston Medical College	Westbrook	May 13th, 1852.
76	Louis L. Holmes,	Washington,	University of New York	Chatham County	May 18th, 1853.
77	A. D. McLean,	Robeson county	Jefferson Medical College	Robeson county	do
78	H. F. Murphy,	New Hanover	Columbia College	Teachy's Depot	do
79	G. W. Blacknall.	Granville county,	University of Pennsylvania	Henderson Depot	do
80	C. T. Murphy,	New Hanover,	Jefferson Medical College	Sampson County	do
81	C. C. Covington,	Richmond,	University of Pennsylvania	Rockingham	do
82	J. McK. Alford,	Robeson,	" New York	Alfordsville	do
83	A. M. McInnon, (L)	Richmond,	" Pennsylvania	Floral College	do
84	H. H. Robinson,	Bennington, Vt.	Virginia Medical College	Elizabethtown	do

LIST OF MEMBERS.—CONTINUED.

No.	NAMES.	WHERE BORN.	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
85	Dr. Robert Monroe	Cumberland county	Charleston Medical College	Cumberland county	May 18th, 1853.
86	B. C. W iliams,	Moore do	University of Pennsylvania	do do	do
87	Baker W Mabrey	Edgecombe do	do New York	Tawboro'	May 10th, 1854.
88	F. M. Garrett	do do	do do	Falkland, Pitt	do
89	J. T. Leach		Rutger's	Leachburg	do
90	Otis F. Manson		Med. Dep. H. S. College Va.	Townesville	do
91	Geo. M. Cooley		Jefferson Medical College	Raleigh	do
92	Edward Warren		University of Virginia,	Edenton	do
93	Hugh Kelly		do New York	Statesville	do
94	M. M. Murray		do do	Middleton	do
95	J. F. Tompkins		do do	Raleigh	do
96	T. L. Banks		do Pennsylvania	Wake county	do
97	E. R. Gibson		do do	Concord	May 16th, 1855.
98	A. C. McRee		do do	do	do
99	F. M. Henderson		do do	do	do
100	A. M. Nesbitt,		do New York	Salisbury	do
101	J. J. Summerell		do Pennsylvania	do	do
102	Peter E. Hines		do do	Raleigh	do
103	M. Whitehead		Medical College of Virginia	Salisbury	do
104	Robert F. Hackett		Jefferson Medical College	Wilkesboro'	May 17th, 1855.
105	James G. Ramsay		do do do	Rowan county	May 16th, 1855.
106	Henry J. Macon	Warren	University of Pennsylvania	Warrenton	May 14th, 1856.
107	J. C. Marriott	Wakefield	do do	Wakefield	do
108	H. M. Whitley	Johnston county	do do	Franklinton,	do
109	Thos. H Avera	Wake	do do	Eagle Rock	do
110	Charles T. Powe	Salisbury	do do	Salisbury	do
111	J. A. Gibson	Concord	do do	Concord	do
112	Edward C. Fisher	Richmond Va.	do Maryland	Raleigh	do

NO.	NAMES.	WHERE BORN.	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
113	Dr.C. W. Graham,	Duplin County,	University of Pennsylvania,	Kenansvile,	April 15, 1857.
114	Wm. Strudwick,	Hillsboro',	Jefferson Medical College,	Hillsboro',	"
115	S. Davis Grice,	Portsmouth, Va.	University of Pennsylvania,	Elizabeth City,	"
116	William C. Warren,	Charles City, Va.	" "	Edenton,	"
117	Caleb Winslow,	Perquimans County,	" "	Hertford,	"
118	George H. Coke,	Williamsburg, Va.	" "	Woodville,	"
119	Thomas D. Warren,	James City, Va.,	" "	Edenton,	"
120	T. H. Wingfield,	Portsmouth, Va.,	" "	Bertie County,	"
121	R. H. Winborne,	Hertford County,	" "	Chowan "	"
122	W. G. Poole,	Pasquotank County,	" "	Elizabeth City,	"
123	James N. Butt,	" "	" "	" "	"
124	Robt. B. Tabb,	Elizabeth City Co., Va.	" "	Camden County,	"
125	Wm. H. Finlayson,	Sampson County, N. C.	Jefferson Medical College,	Goldsboro',	"
126	David Cox,	Currituck "	University of Pennsylvania,	Perquimans Co.,	"
127	J. F. Manning,	Edenton.*	" "	Gates County,	"
128	S. C. Benjamin, (L)	New York,	Birkshire,		"
129	B. F. Fessenden,	Plymouth,	University of Pennsylvania,	Plymouth,	"
130	Wm. H. Speller,*	Bertie County,	" "	Windsor,	"
131	Geo. W. Hodges.	Tyrrel County, N. C.	University of New York,	Sladesville, N. C.	"
132	J. T. Smith,	Hertford,	" Virginia,	Hertford,	"
133	S. W. Street,	Maryland,	" Maryland,	"	"
134	Wm. R. Spruell,	Edgecombe County,	" Pennsylvania,	Pasquotank,	"
135	B. F. Graham,	Alamance "	Jefferson Medical College,	Wake County,	May 19, 1858.
136	Ira Scarboro,	Green "	University of Pennsylvania,	Greene,	"
137	J. M. Happoldt,	Charleston, S. C.	" "	Morganton,	"
138	S. Singleton,	Hyde County, N. C.	" "	Portsmouth,	"
139	William R. King,	Franklin "	" "	Louisburg,	"
140	N. D. Craton,	Rutherfordton,	Charleston Medical College	Goldsboro',	"

LIST OF MEMBERS.—CONTINUED.

NO.	NAMES.	WHERE BORN.	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
141	Dr. James A. Bizzell,	Wayne County,	University of Pennsylvania,	Clinton, N. C.	May 19, 1858
142	W. C. Lankford,	Franklin "	" New York,	Franklinton,	do
143	Wm. H. Howerton,	" "	Jefferson Medical College,	Richlands, Onslow,	do
144	W. J. Busbee,	Wake "	University of Maryland,	Wake County,	do
145	J. Dickson Pearsall,	Duplin "	" Pennsylvania,	Sampson "	do
146	John S. Leach,	Johnston, "	" "	Johnston "	do
147	James K. Hall,	Iredell "	" "	Greensboro',	do
148	S. G. Boyden,	Massachusetts,	Harvard University,	Goldhill,	do
149	Lycurgus M. Bell,	Currituck County,	University of New York,	Currituck,	do
150	John J. Wilson,	Pennsylvania,	" Pennsylvania,	Goldhill,	do
151	E. W. Ward,	Newberne,	Jefferson Medical College,	Jacksonville,	do
152	George A. Foote,	Warrenton,	" "	Warrenton,	do
153	William Cramer,	New York,	University of New York,	Beaufort,	do
154	John Shackelford,	Newberne,	" Pennsylvania,	Trenton,	do
155	A. Medway,	Hungary,	Charleston Medical Collge,	Wilmington,	do
156	Stuart White,	Raleigh,	University of New York,	New York,	do
157	Samuel E. Chapman,	Mewberne, N. C	" "	Newberne,	do
158	M. F. Arendell,	Beaufort,	" "	Beaufort,	do
159	A. S. Wiggins,	Halifax County,	" Pennsylvania,	Ringwood,	do
160	Warburton Hill,	Duplin,	" New York,	Goldsboro',	do
161	Charles H. Harriss,	Wake,	" Pennsylvania,	Earpsboro',	do
162	Alexander Taylor,*	Newberne,	" "	Newberne,	do
163	Peter Custis,	"	" "	"	do
164	A. S. Cotton,*	Edgecombe County,	" "	Wilson,	do
165	Leroy Chappel,	Wake "	" "	Kinston,	do
166	W. R. Sharpe,	Iredell "	Jefferson Medical College,	Fulton,	do
167	R. H. Shield,	Virginia,	Virginia " "	Winton,	do
168	R. G. Cobb,	Lenoir County,	College P. and S. New York.	Newberne,	do

NO.	NAMES.	WHERE BORN.	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
169	Dr. Walter Duffy,	Ireland, N. C.	Charleston Medical College	Newberne, N. C.	May 19, 1858.
170	W. T. Howard,	Virginia,	Jefferson " "	Warrenton	do
171	W. W. Davis,	Pittsboro',	University of Pennsylvania,	Wilmington	do
172	J. A. Guion,	Newberne,	" "	Newberne	do
173	James A. Miller,	Georgia,	" New York	Wilmington	19, 1858.
174	Samuel Masters,	Hyde county	" Pennsylvania	Newberne	11, 1859.
175	Eugene Grissom,	Granville county,	" "	New Light	do
176	R. L. Payne,	Lexington,	Jefferson Medical College	Lexington	do
177	William H. Hall,	Wilmington,	University of New York,	Wilmington	do
178	R. A. Chambers,	Montgomery county	" "	Pekin	do
179	J. Rhodes Tayloe,*	Washington	" "	Washington	do
180	D. T. Tayloe,	"	" "	"	do
181	T. P. Coleman,	Iredell county	University of Pennsylvania	Concord	do
182	A. A. Lawrence,	" "	" "	Statesville	do
183	Wyatt M. Brown,	Pitt county	University of New York,	Greenville	do
184	J. G. Thomas,	Franklin county,	" Pennsylvania	Cedar Rock	do
185	F. M. Rountree,	Pitt "	" "	Kinston,	do
186	Wm. H. H. Conner,	Randolph "	Jefferson Medical College	New Market	do
187	James Hickerson,	Wilkes "	" "	Briar Creek	do
188	E. B. Hampton,	" "	" "	Jonesville	do
189	T. W. Johnston,	Orange "	" "	Orange	do
190	A. Torrence,	Mecklenburg county	Charleston "	Mt. Vernon	do
191	J. W. Caldwell,	Charlotte	" "	Charlotte	do
192	R. L. Beall	Davidson county,	Jefferson "	Cotton Grove	do
193	C. A. Alexander,	Mecklenburg "		Cabarrus	do
194	L. S. Bingham,	Salisbury	Castleton Medical College	Concord	do
195	Richard R. Barr,	Rowan county	Jefferson "	China Grove	do
196	C. Happoldt,	Charleston, S. C.	South Carolina "	Morganton	do

LIST OF MEMBERS.—CONTINUED.

NO.	NAMES.	WHERE BORN	MEDICAL SCHOOL.	PRESENT RESIDENCE.	DATE OF SIGNING.
197	Dr. Wm. A. Collett	Burke county, N. C.	Jefferson Medical College	Morganton	May 11, 1859
198	Thomas Williams	Spartanburg Dist., S. C.	Transylvania College	Shelby	do
199	James K. Nisbet,	Iredell couuty, N. C.	University of Pennsylvania	Statesville	do
200	Edmund F. Ashe	Alabama	Jefferson Medical College	Wadesboro'	do
201	Jas. W. Hall	Salisbury, N. C.	Transylvania College	Salisbury	do
202	R. S. Campbell	Iredell county	Charleston do	Snow Creek	do
203	R. B. Riddick	Gates "	University of Pennsylvania	Hertford county	do
204	Wm. M. Riddick	" "	do do	Woodville	do
205	M. A. Locke	Rowan "	Louisville	Rowan Mills	do
206	D. B. Wood,	" "	University of New York	do do	do
207	O. P. Houston	" "	Jefferson Medical College	Mount Ulla	19, 1859
208	W. M. Campbell	Iredell "	do do	Statesville	do
209	James Hay	Ireland	Penn. Medical do	Johnston County	do
210	James McGuire	Davie county N. C.	University of New York	County Line	do
211	W. J. Jones	Greene county	do do	Snow Hill	May, 1860
212	J. W. Lewis	Hertford do	do Maryland	Harrellsville	do
213	W. J. Bullock	Wilson do	do Pennsylvania	Wilson	do
214	Wm. Jas. Courts	Surry do	New Orleans School Med.	Rawlinsburg	do
215	J. Eborn	Beaufort do	University of New York	Bath	do
216	W. R. Capehart	Edenton	New Orleans School Med.	Edenton	do
217	Frank. Patterson	Franklin	University of Maryland	Warrenton	do
218	Chas. J. O'Hagan	Ireland	do New York	Greenville	do
219	W. A. B. Norcom,	Edenton	do Pennsylvania	Edenton	do
220	J. Francis King	Beaufort	New York Medical College	Washington	do
221	J. W. Jones	Edgecombe County	University of Pennsylvania	Tarboro'	do
222	Will. H. Battle	Louisburg	Medical College of So. Ca.	Clayton	do
223	Richard H. Lewis	Edgecombe county	University of Pennsylvania	Rocky Mount	do
224	Horace I. Butt	Isle of Wight, Va.	do do	Durham's Creek	do

LIST OF MEMBERS.—Concluded.

No.	NAMES.	WHERE BORN	MEDICAL SCHOOL	PRESENT RESIDENCE.	DATE OF SIGNING.
225	Dr. J. M. Henderson	Mecklenburg county	University of New York	Morganton	May, 1860
226	Wm. V. Bonner	Beaufort	do do	Pactolus	do
227	James F. Long	Plymouth	New York Medical College	Washington	do
228	H. B. Ross	Beaufort county	University of New York	Sladesville	do
229	J. N. Abell	do do	do do	Swan Quarter	do
230	John K. Ruffin	Alamance do	do Pennsylvania	Washington	do
231	John A. Gallagher	Washington	do New York	do	do
232	Chas. W. Knight	Tarboro'	do Pennsylvania	Williamston	do
233	J. B. Hughes	Newberne	do do	Newberne	do
234	W. C. Tate			Morganton	do
235	R. C. Pearson			do	May 8th, 1861
236	H. W. Tate			do	do
237	Calhoun Hill			Branch's Store, Duplin	do
238	Reynoldson Curtis			Catawba Station	do
239	Junius T Fuller			Allensville, Person	do
240	W W Gaither			Gaston county	do
241	R A Shinpock			Milledgeville	do
242	Jno W Lawing			Mecklenburg	do
243	P A Barrier			Mount Pleasant	do
244	J C Gidney			Shelby	do

HONORARY MEMBERS.

NAMES.	RESIDENCE.	NAMES.	RESIDENCE.
1. Drs. James Webb*	Hillsboro' N. C.	10. Drs S. McClanahan	Chatham connty N. C.
2. James F McRee, Sr.	Wilmington N. C.	11. John D Bellamy	Wilmington do
3. Fred J Hill*	do do	12. Alexander Long	Salisbury do
4. A J DeRosset, Sr*	do do	13. Richard Dillard,	Chowan county do
5. Simmons J Baker*	Raleigh do	14 Wm. H. McPheters,	St. Louis, Missouri
6. E T Broadnax	Leaksville do	15 E. D. Fenner	New Orleans, Louisiana
7. John T Boyd	Newberne do	16 Wm. D. Wright	Norfolk, Virginia
8. John H Hill	Wilmington do	17 Thos. H. Hall*	Edgecombe county, N. C.
9. James J Philips	Edgecombe do	18 James Norcom*	Edenton, N. C

NOTE.—Nos. 10 to 15 inclusive, and 19, 23 and 24 have never signed the Constitution. Nos. 89 to 105 inclusive, state when born instead of where born.

Those marked thus * are deceased. Those marked (L) have left the State.

VOL. III.] SEPTEMBER, 1861. [NO. 5.

THE

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OF

NORTH CAROLINA,

ISSUED BI-MONTHLY AT $3 PER ANNUM IN ADVANCE.

CHAS. E. JOHNSON, M. D.
S. S. SATCHWELL, M. D. } Editors.

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1861.

CONTENTS.

ORIGINAL COMMUNICATIONS.

A Reply to Dr. W. T. Howard's Review of the "Essay on Malarial Pneumonia," which appeared in the Transactions of the Medical Society of North Carolina. By O. F. MANSON, M. D. 433
Contribution to Conservative Surgery. By Jas. H. DICKSON, M. D. 454
Diseases of Burke County. By C. HAPPOLDT, M. D. 459
Letters from S. S. Satchwell, M. D. 465

SELECTIONS.

PRACTICE OF MEDICINE.
Camp-Dysentery,, 471
SURGERY.
Amputations, 488
OBSTETRICS.
Treatment of Inflammatory Affections of the Female Breast, 505
Cancer of the Uterus, 511
On the continuance of Ovulation During Pregnancy, 512
Pathology and Treatment of Diseases of Menstruation, 513
THERAPEUTICS.
Thermo-Therapeia, or the Heat-Cure. 518
Blood-Letting as a Therapeutic Agent, 524
On the Absorption of Pleuritic Exudations, 532
Explosion of Fulminate of Mercury under Water, 534

EDITORIAL.

Apology, &c. 535
Subscribers, 536
Announcement, 536

NORTH CAROLINA

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VOL. III.] SEPTEMBER, 1861. NO. V.]

Original Communications.

A Reply to Dr. W. T. Howard's Reviw of the "Essay on Malarial Pneumonia," which appeared in the Transactions of the Medical Society of North Carolina.

BY OTIS FREDERIC MANSON, M. D. MEMBER OF THE MED. SOC. OF N. C.

(*Continued.*)

THE EXPECTORATION IN MALARIAL PNEUMONIA.

In our essay, under the head of "General course and Progress," the following brief observations occur, in relation to the sputa in this disease:—"The cough is commonly dry at the commencement, *or* attended with an excretion of glairy mucus; sooner or later, however, the sputa become more or less tinged with blood, forming the pathognomonic ferruginous expectoration, the hues of which are as numerous, as the proportions in which blood and mucus may be mingled. Thus, we shall see in some cases, the latter merely tinged with blood; or as *more frequently happens*, a uniform, thin, bloody, frothy fluid, only is seen, possessing but little viscidity, or tenacity, whilst in *some* instances, a pure and copious *hæmoptysis* is observed. Later, however, the expectoration is liable to great variations in color and hue. Thus it may be of the various shades of

brown, red and yellow, commingled, and in the advanced stages may become green, or almost black."

Again, in our remarks on the "Physical Signs," we stated, that in Malarial Pneumonia, that the expectoration is usually more fluid, and more sanguineous, than in Simple Pneumonia, and that early in the invasion in the former disease, "in some cases, on the first day of its existence, there is a copious, sero-sanguineous *secretion* or *exhalation* present, obstructing the current of air in the bronchiœ, trachea and larynx," and in a *note* the opinion was expressed, that in this disease the expectoration is usually an *exhalation* and not the result of inflammation. Further on in our observations on the "Diagnosis," it was observed, that the expectoration is *often* very different in the two diseases. In the former (malarial pneumonia) it is usually less viscid, less copious and more fluid, partaking more of the character of blood mingled with serum; in fine, presenting more of the character of defibrinized blood, than as a product of inflammatory action."

These observations of course, do not escape the vigilance of our critic, whose conclusions may be summed up as follows:

1st. That there is no special character of the sputa, peculiar to, or diagnostic of pneumonia impressed by the poison of malaria.

2. That he has never seen hæmoptysis in pneumonia, unconnected with tubercular deposit except in one instance of long-standing disease of the heart.

3. That *we* have *no reason* for terming the thin, bloody, frothy expectoration an *exhalation*, as it is well-known at the present time, that no such open-mouthed vessels as *exhalents* exist.

From the earliest periods of ancient medicine, an expectoration of sanguinolent fluid, has been recognized, as characterizing the various forms of disease, classed under the generic name of Pneumonia. In the pages of Hippo-

crates,[1] Celsus,[2] Aretæus[3] and Galen,[4] it is frequently mentioned, and its varieties of color and consistence, are therein as truthfully and graphically described, as in the productions of the present day.

Nor have the more recent discoveries of modern science, diminished the diagnostic importance of this prominent, distinguishing symptom. With all the light derived from the investigations of Laennec Avenbrugger and yet in the nineteenth century, Chomel[5] declares, "the viscid and sanguinolent sputum, to be the most certain sign of inflammation of the lungs," and Andral, alluding to the same "prominent traits," exclaims, that "they do not permit us to confound *the expectoration of pneumonia*, with any other."

By both of these eminent writers, as well as by their cotemporaries and successors, it has been described as a viscid, tenacious, semi-transparent fluid, the different colors of which, as first indicated by Hildenbrand[7] and verified by experiments of Andral,[8] are due to the various proportions in which blood and mucus might be commingled. The properties of viscidity and tenacity, have been no less dwelt upon as essential peculiarities of the sputa, in the simple, or frank form of the disease. Grisolle[9] observes, the viscidity of the sputa is *very striking*, that they are usually inspissated, consistent, resemble jelly, and adhere so closely to the vessel, in which they are contained, that it may be inclined or inverted without displacing them." Chomel[10]

[1] The Genuine Work of Hippocrates. Sydenham Society, Ed. i, 246, 324. ii, 730, 732.

[2] De Medecina. Ed. Rotterodami, 1750, p. 209.

[3] Traité des signes, des causes, et de la cure des maladies, traduit par Regrand, p. 30.

[4] Oeuvres Anatomiques Physiologiques et Medicales traduit (par Daremberg) Paris, 1856, ii. 534-5-6.

[5] Dictionnaire de Médicine, xvii. 232.

[6] Clinique Médicale, 4me. ed. iii. 492-3.

[7] Medicine Pratique, traduit, par Gauthier, i. 93-4. Paris, 1824.

[8] Clinique Médicale, iii. 502.

[9] Traité Pratique de la Pneumonie, 210.

[10] Dict. de Médicine, xvii. 216.

describes the sputa, as usually transparent, mixed intimately with bubbles of air, and that they are also very viscid, adherent, glutinous, and form a trembling, gelatiniform mass, and Andral[1] describes them in nearly the same words. Such is the expectoration which has been ever, and still continues to be regarded as pathognomonic of Simple Pneumonia.

From a close observation of the various forms of pneumonia for many years, it has gradually forced itself on our conviction that the sputa in Malarial pneumonia were commonly, less viscid, and tenacious, than those usually described as pertaining to the Idiopathic disease. It is true, that the expectoration occasionally presents the same peculiarities, as those said to be characteristic of the simple form, for reasons which we shall endeavor to explain hereafter; but, in the large majority of cases of the malarial form, we are firmly convinced, from our own experience, that the expectoration as we have stated, is usually more fluid and more sanguineous in this than in simple pneumonia. It is true, as asserted by our critic, that this statement rests solely upon our simple assertion, to which, judging from his subsequent remarks, but little weight or value ought to be attached. But the question arises. Is the statement necessarily incorrect, because it emanates from such an humble source? Is a fact in science to be inevitably rejected because it does not proceed from high authority, because it has not been pronounced *ex cathedra?* No! no! The reign of oligarchs in physic is fortunately, and we trust, forever, ended, and the true votary of science, no longer recognizes within her domain, either priests or infallible guides, or "prayer books," from whose doctrines there is no appeal. In the words of the erudite and judicious Sarcone,* "Medicine is a Republic, of which each physician being a citizen, has the right to expose his opinions, and whose inter-

[1] Op. cit. iii. 492-3.

*Histoire Raisonnée des maladies observées à Naples, ii. 7.

est it is, to listen to the voice of its youngest child. It owes its acquisitions, to the feeble as well as the strong; to the timid as well as the audacious."

If, as our critic is graciously pleased to admit, we have been a "zealous student" and "faithful minister to the sick," then we hold that our opinion is justly entitled to some consideration, and that we have the same right to demand of him counter evidence, which he has to insist upon, "conclusive demonstration." If every statement in our paper, which was merely offered as a record of our personal observation, had been susceptible of "conclusive demonstration," there would have been no need of its having been written at all, as in that event, it would merely have been a repetition of that which had been written before by others.

If *there are* different forms of pneumonia, as we shall endeavor to prove hereafter, which, to use the language of Grisolle,† differ from ordinary pneumonia, in their march, prognosis and treatment, and in which certain symptoms altogether novel appear, and others, in which symptoms habitually apparent, are obscured, or altogether absent," if in this disease, as maintained by Drake, the disturbance of the lungs results *largely* from "sanguineous engorgement and retarded transmission, of blood through the organ," and the pathological condition is rather that of congestion than active inflammation and which view is supported by C. J. B. Williams,[1] Valleix,[2] Briquet,[3] and Constant,[4] in Europe, and in this country, by Chapman,[5] Cartwright,[6]

†Traité de la pneumonie, 398.

[1] Cyclopædia of Practical Medicine, iii. 633–4.

[2] Guide du Médicin Practicien, v. 568.

[3] Traitè Therapeutique du Quinquina, Paris, 1855, p. 388.

[4] Ranking's Abstract of the Medical Sciences, No. 18, 74. (Am. Reprint.)

[5] Benedict's Compendium of Chapman's Lectures, p, 218.

[6] Medical Recorder, x. 71, Philadelphia, 1826. N. O. Med. and Surg. Journal, vii. 699.

Lewis[7] and Bell,[8] then we should reasonably suppose, *a priori*, that the sputa—the result of these conditions, would present some diversity in their characters. Is it possible that the expectoration in a disease like Simple Pneumonia, which has always been regarded, as presenting an instance of the most intense inflammation, can present, precisely the same characters, as a disease, which, according to Drake and others, consists chiefly in passive congestion? Can it be true that the capillary vessels, in a state of intense phlogistic action and in a passive state of engorgement, pour out the same fluids, identical in appearance, consistence and composition? Does the Malarial poison play an inactive part in the scene? Does it exert no influence on the morbid process? Our critic *answers emphatically*, that "the expectoration is without value in the diagnosis pneumonia impressed by the poison of malaria, and that "there is *no* special character of the sputa peculiar to or diagnostic of that variety of the disease." In a word, his "malarial law" is here totally inoperative.

We should at least, have given our opponent the merit of candor and sincere conviction, had he adhered to this conclusion, however dogmatically and confidently expressed, but unfortunately for his reputation as a critic, after pronouncing his opinion so boldly and decidedly, he shifts his ground and contradicts himself. After positively asserting in part 1st. of his review, that the sputa in malarial pneumonia were "without value" in the diagnosis between it and other forms, he finds on consideration, that he has been rather premature in his decisions, and he therefore makes an occasion in part iii (being the 210th page of his Review) to return to the subject, and to indulge in a *rêsumê*, the evident object of which is to gloss over his previous errors. He now becomes suddenly enlightened, and finds that there seems to be good reasons for the *belief* that the sputum is

[7] New Orleans Med. and Surg. Journal, iv. 30.

[8] Theory and Practice of Medicine by John Bell and Wm. Stokes, ii. 220.

sometimes tinged by (biliverdin*) the coloring matter of the bile," and as in this latitude the liver is oftener deranged through the operation of miasmatic poison than any other cause—the sputa when of a bilious hue, "may lend *some help to diagnosis.*" He then proceeds to state, "the color of this sputum varies from a deep yellow, reddish-orange, or gamboge to a dark-brown or tobacco-juice appearance."

It is surprising that one, who like our critic, is so tenacious of "facts," and so perfectly regardless of "opinions," should at last agree to base his diagnosis upon a mere "belief," that the expectoration is tinged by the coloring matter of the bile, for I hold that although the impression that the *bilious hues* of the sputa in pneumonia is owing to the admixture of bile is of very ancient origin, and continues to be a popular belief to the present day, that it is yet scientifically undetermined. We were, therefore, careful in our essay to depict the various colors of the excretion without stating, or even implying, that any of its hues were due to this ingredient. We therefore, are warranted in stating, that until it is proven that any of the elements of the bile *are present* in the expectoration, that the yellow and green and apparently bilious tinge, can lend no aid to diagnosis, between the different forms of the disease. In proof of this position, let us examine the grounds upon which our critic bases his opinion. He says, "without entering fully into the matter, that there seems to be good reason for the *belief* that the sputum is sometimes tinged by the coloring matter of the bile. Andral was far from denying the influence of this cause in modifying the appearance of the spu-

*As our reviewer is so very fastidiously precise, he will excuse us for correcting him in regard to the coloring matter of the bile. According to Draper (Human Physiology, p. 204.) "The coloring matter in *carniverous omniverous* animals is *brown*, the *chloepyrrhim* of Berzelius; but in *birds, fishes* and *amphibia it is green-biliverdin.*" As the latter is a green pigment, were it present in human bile, it could not impart the hues mentioned by our critic as characteristic of bilious sputa, viz: "a deep yellow, reddish-orange or gamboge, dark brown or tobacco-juice appearance."

tum; and in proof of its agency in this regard, he gives a *case;* and Grisolle, Martin, Solon, Potter, Drake and Swelt, make similar statements."

1st. Andral. It is true, as our reviewer states, "that Andral was far from *denying*" the presence of bile in the sputa and that he gave "a case," and from this partial notice of Andral's views on the subject, the reader is led to infer, that this author regarded the yellow and greenish tints of expectoration, as certainly due to admixture with the hepatic secretion—but what are the facts? In order that the reader may judge correctly for himself, as the observations of Andral are very brief on the subject, we translate them:

"Does the color of the sputa always depend on the presence of blood? Are they not also often colored by the bile? We are far from pretending to *deny* the latter cause of colouration, we have indeed given a case (case lv,) but we regard it as *more rare* than commonly supposed, and we believe that we *may generally attribute* the various colors of the sputa to the different proportions of blood they contain. If indeed we add to pure water, rendered viscid by the addition of mucilage, a small quantity of blood and gradually increase its proportions, the tint will be seen to become of a deeper and deeper yellow, then yellowish green, then a yellowish red—the color of rust of iron, and at last an intense red. We find also in the serum of the blood, when separated from the clot, the various hues of yellow, green and red, according to the various proportions of coloring matter they contain. The pneumonic sputa are very commonly yellow at the *debut* of the disease, they acquire afterwards a very evident red tint—then *in the degree* in which the *inflammation diminishes*, they are *again* seen to become *yellow or green. Shall we admit that the bile and blood succeed each other alternately*, when the varying changes of color are so *naturally explained*, by regarding it as the *result of the variable quantity of blood*, contained in the matter expectorated?"

Our reviewer, however, further states, in proof of the agency of the bile, in the coloration of the sputa, that Andral gives a case. Let us refer to it. (Case lv. "*Pneumoniavec Hepatite.*" op. cè vol. cit. p. 414.) Here we are told, at the first glance, that this is an instance of *Pneumonia* complicated with Hepatites as proven by the post mortem; and what does Andral say concerning the sputa?

We give his words: "*The sputa did not announce here the degree of* PULMONARY *inflammation.* They were scarcely viscid and the green color *seemed* to depend on the mixture of bile and bronchial mucus. What proves this is—that this same color was found on the superior surface of the tongue. *The nature of the expectoration was then determined in this case, by the disease of the liver* (these italics are Andral's.) The true bilious sputa are however extremely rare, (*infiniment rares*) and hereafter we shall *endeavor to prove* that the sputa to which this name is *ordinarily given*, are *nothing more* than sputa tinged more or less with blood." So much for this authority. He only cites *one* case, in which he *thought* the expectoration was tinged with bile, and this was a case, in which the liver was as much diseased as the lungs, *being "of such remarkable softness, that it was reduced by slight pressure to a reddish pulp."* It will be seen, therefore that the testimony of Andral is altogether decidedly *against* the opinion that the ordinary yellow and greenish hues of the sputa in Simple Pneumonia are owing to bile; for he not only argues against this view, but closes by declaring, that "the sputa which ordinarily receive that name are *nothing but sputa* tinged with various proportions of *blood.*" Andral never has written a line to encourage the belief that the sputa in *Simple* pneumonia, *Malarial* pneumonia or *Typhoid* pneumonia were tinged by the pigment of the bile.

2. GRISOLLE. This writer is the next in order, among those adduced by our reviewer to prove, that the sputum is sometimes tinged by the coloring matter of the bile; but after a careful perusal of all that this author has written upon the subject, we can find nothing in support of this view. It is true that he mentions that in some patients, "the yellow color, instead of being uniform throughout, is mingled with a tint slightly green, *as if* a certain quantity of bile were mixed with the mucus, and that the ancient physicians attributed the yellow and green colors of the sputa in pneumonia, to the presence of the bile, but he

also as positively and distinctly states, that Hildenbrand had "*demonstrated*" and Andral "had likewise *found*," that these hues were due to the presence of blood in different proportions. In conclusion, although he states that "these colors *may be* nearly produced by the coloring matter of the bile," and cites Andral's case above mentioned, (but as a remarkable one) he yet nowhere gives it even as his belief, that these hues were *certainly due* to the presence of this element. With Andral and Grisolle, even in this *one case*, it is a mere surmise, and neither pretend to base their opinion upon any analysis of the sputa. In his chapter on Bilious Pneumonia and Intermittent and Remittent Pneumonia, the latter of which our critic states is identical with our Malarial Pneumonia, Grisolle makes no mention of bile in connection with the expectoration, and therefore lends no possible support to the opinions of our reviewer.

3. MARTIN SOLON. Our critic is mistaken in citing this writer as an authority for the opinion that bile may be present in the sputa, his experiments as given in his work "De l'Albuminurie, Paris, 1838," cited by Grisolle and Chomel were made upon the urine and serum of the blood and not the expectoration. It is hardly necessary to state, that the fact that he cites, of a greenish tinge being given to these fluids, by the addition of nitric acid, if they had any bearing on the subject under discussion, would be far from affording a satisfactory proof of the presence of bile—and have therefore been very properly ignored by Grisolle.*

4. CHOMEL. In his article on "Pneumonie," in the "Dictionnaire de Médecine," this writer, in noticing the symptoms of "Bilious Pneumonia," (as described by Stoll) observes. "The yellow or green color of the sputa, the tongue and often also of various matters excreted; the equally yellowish tint of the skin and the acrid heat, form the principal traits of this affection. Chemical experiments have proven, that the yellow, or green color of the sputa,

*TRAITÉ de la Pneumonie—Pneumonie bilieuse pp. 404–5.

may depend on the intimate mixture of mucus with a certain proportion of blood, as well as the presence of bile." In his "Pathologie Générale, a later work, this writer has no observation on the subject, and therefore contrary to the assertion of our critic, affords no proof of the agency of the bile, in coloring the expectoration.

5. *Drake.* In treating of the Symptoms of "Bilious or Malarial Pneumonitis," this author briefly observes, that "the presence of bile is manifest in the urine, the serum of the drawn blood, the skin and as *I believe* but *not on conclusive evidence* in the sputa from the bronchial tubes." As it is evident that this writer drew his reference in regard to the presence of bile in the expectoration from the color of the latter, and as he admits himself, that his opinion is a mere *belief* arising from evidence "*not conclusive*" further comment is unnecessary.

6. Potter. We have not been able to procure the essay of Potter which originally appeared in the Baltimore Medical and Surgical Journal for January, 1834. His paper is however quoted by Grisolle in his chapter on Pneumonie bilieuse and had it afforded any proof on this subject it would doubtless, have elicited his notice.

7. Swett. This writer merely states that in Simple Pneumonia" although there is *generally no evident biliary* derangement, but that sometimes in the course of the disease, the skin and eyes become yellow and the urine and even the expectoration become affected in the same manner." The color here being evidently the only evidence adduced in proof of the bilious character of the sputa, it will be seen that it affords but slender "proof of the presence of the bile" in the expectoration.

In reviewing these authorities, the reader will be doubtless surprised that the opinion which we perceive has been handed down from remote antiquity, that the yellow and greenish hues of the expectoration in pneumonia, were due to the admixture of bile, has never been substantiated. No analysis of the sputa to this end has been attempted by any

of the writers cited, nor by any other with whom we are acquainted. *We think it highly probable that the fact of its presence may be yet proven*, but as we have said at the onset, the question has never been scientifically determined, and until it has been, it can neither enter into the discussion of the Symptomatology of Simple pneumonia and much less throw any light on or "lend" any "help to the diagnosis" between that disease and the malarial form as asserted by our reviewer.

But our critic now becomes exquisitely hypercritical and microscopically anatomical. "With *what reason*," he peremptorily demands, "does Dr. Manson allege, that this variety of the expectoration ('the thin, bloody, frothy fluid,') is simply an exhalation and not the result of inflammation? Is it not well known at the present time that, strictly speaking, the fancied open-mouthed vessels (exhalents) described by Bichat have no existence? that none as Dr. Gross remarks have ever been demonstrated?"

Our critic here again vacates his tri-pedal throne, instals himself into the chair of anatomy, and gives us a gratuitous lecture. As grave, sententious and severe, as Sancho Panza in the gubernatorial chair of Barataria, he demands the reasons why we are guilty of following this anatomical flight of Bichat's luxuriant fancy, without pausing to inquire, if we were guilty at all. Most rigid of reviewers! of critics, the acutest! of microscopists, the minutist! we pray thee before passing sentence to listen to our defense. In employing the term "*Exhalation*," to denote the mode or process, by which the blood present in the expectoration, found its exit from the containing vessels, we by no means desired to inculcate the view, that a set of vessels existed, devoted to that special purpose. It is a familiar expression, frequently employed to indicate an occurrence, concerning the essential nature of which, anatomists themselves are not agreed. Concurring with our reviewer, that the sputa of pneumonia are composed chiefly of blood and mucus, that this blood has escaped from its natural channels, and

therefore, however minute in quantity, is really a hemorrhage; we cheerfully admit our personal ignorance in regard to the manner, or species of outlet, by which the blood escapes. There are various and conflicting opinions on the subject, amongst the most distinguished pathologists and it cannot therefore be demanded, that we should decide the question. As an admirable and concise statement of the subject we quote the following from Bonchut.* "The subject of Hemorrhages is often mentioned in the works of Hippocrates, but nothing in relation to their mechanism, or their production, is there indicated. Later, however, Themison, Aretæus, Erasistratus and Cælius Aurelianus, with less reserve in their language, commenced to dogmatise on this point, and we perceive in their writings, a very satisfactory division of hemmorrhages, from *wounds*, from *rupture* and from *ulceration*. This classification was not approved by Galen. He divided Hemorrhages into the three following classes: hemorrhage by diapedesis (exhalation) by diabrosis; (erasion) and by anastomosis, accordingly as the sanguine flow may have taken place, by the opening of the extremities of the vessels; by rupture or ulceration. This division, at present almost forgotten, reigned for a long period in the science. Van Helmont and Taracelsus were the first to oppose it, but their efforts were only temporarily successful. Their theory that hemorrhage was due to an alteration of the vessels, produced by blood charged with corrosive salts, erroneous in its origin, has at present only an historical interest. Frederic Hoffman in his first great work on hemorrhage, general and local, attributed them to an obstruction of the capillaries, accompanied with a spasm so forcible as to produce their *rupture*. This idea of spasm, a precursor of hemorrhages, introduced into the science by Hoffman, was revived by Stahl, and transformed in accordance with his principles, into a new theory, in which the greater or

* Nouveaux Eléments de Pathologie *générale*. Paris, 1857, pp. 533-4-5.

less activity of the vital principle is considered in its relations with crises, as the cause of the majority of hemorrhages. To him belongs the division of hemorrhages into *active* and *passive*, which exists in the present day. The first, are the result of spasm, which impels the blood towards the orifice of the vessel, and the second, on the contrary are due to external causes, attacking the vessels and rendering their parieties insufficient to retain the blood. This theory, which continued to be adopted until now, has had a merited success. With the exception of a few modifications, it has been adopted by Juncker, Borden, Cullen, Pinel, Bichot and by a great number of modern physicians.

In a different theory, which contrasts with this dynamic theory, the activity of the cause, is disregarded, and the material alteration which produces the discharge of blood, is alone considered. In fact it is to a constant lesion of the solids. that Morgagni, Marandel, and Broussais and his school, have attributed the production of hemorrhages.

Without having studied the subject in a special manner, there is however a physician—Huxham—whose researches on the dissolution and putridity of the blood, have elucidated the mode of production of certain hemorrhages. The fact has been confirmed by Andral and Gavarret, in their "Hematologee pathologique," and we are now clearly convinced, that certain conditions of the blood (nosohemics) facilitate greatly the discharge of blood from the vessels which contain it." We are thus given by Bonchut the theories existing on the subject down to the introduction of the microscope as a means of explaining physiological and pathological processes, when strangely enough, the doctrines concerning hemorrhage by rupture of the vessels, introduced as one of the divisions by Galen, again became in vogue. The objection of the microscopists to the theory of exhalation (diopedesis, transudation exosmosis) was based on the fact they asserted, that the capillary vessels do not possess pores of sufficient diameter, to give exit to the red globules of the blood, and therefore that

they could only escape by a rupture of their parieties. To this it may be replied, that as the rupture of these minute vessels has never been discovered, that this theory is open to the same objection as that of exhalation—the ruptures being as totally invisible as the pores.

It is difficult to conceive that any tissue of the organism and especially those of the delicate parieties of the capillaries of the lung can be wholly destitute of that property so common to bodies, as *porosity;* and analogy would lead us to the conclusion, that under certain circumstances, their insterstices would permit the exit of the colored corpuscles of the blood. In certain diseases, the blood has been seen to exude from the surface of the skin and mucous membranes, and in menstruation, which is regarded as the physiological type of hemorrhage, it does not lie within the range of the probable, that the exercise of a healthy function, would necessarily demand a periodical rupture of the uterine vessels. That the microscope, does not enable us to discern any openings in the sides of the vessels, sufficient for the passage of blood corpuscles, is at best a negative objection to the theory of exhalation. If we remember, that previous to the occurrence of hemorrhage, the vessels have been greatly engorged, we have two conditions to facilitate the exit of blood: 1st. The consequent dilatation of the pores in the sides of the vessels. 2nd. A diminution of the size of the corpuscles from pressure. We may, therefore, conceive that a vessel which in its normal state, offered no outlet of sufficient diameter, yet in the state of intense hyperœmia, might present orifices of sufficient dimensions. So much for the theories on the subject. They are but theories at best, it will be perceived, concerning transactions occurring beyond the reach of human vision, even when assisted by the contrivances of art, and practically it is of but little consequence, whether the one or the other is held. But this is not the opinion of our critic. In his judgment, it argues a most reprehensible, and flagitious ignorance, in any one, who adopts the doctrine of exhala-

tion. "With what reason, he authoritatively exclaims, does Dr. Manson allege, that this variety of the expectoration is simply an exhalation and not the result of inflammation. Is it not *well-known* (therefore the greater our ignorance) at the present time, (therefore the farther we are behind the age) that the fancied open-mouthed vessels described by Bichat, have no existence, that none as Dr. Gross (an authority above all others) remarks have ever been demonstrated," etc.

When that notorious "Scotch Reviewer," who alike destitute of discernment and sympathy for the first trembling essays of Genius, sought to cripple the wing destined to soar into the empyrean, by launching against his object the envenomed shafts of depreciative criticism. When he, we repeat, after exhausting his malicious irony and caustic sarcasm came to the young poet's "Imitations of Ossian," he paused and derisively exclaimed: "As to his Ossianic poesy, we are not very good judges, being, in truth so moderately skilled in that species of composition, that we should, in all probability, be criticising *some bit of the genuine Macpherson itself*, were we to express our opinion of Lord Byron's rhapsodies." Fortunate would it have been for *our* reviewer, had he taken a lesson of caution and prudence from his satirical prototype; for in declaring against the theory of exhalation and in intimating that in adopting it, we have been stupidly ignorant of well-known anatomical and pathological facts, he has been passing under the terrible lash of his criticism, *a "bit of the genuine Macpherson itself,"* and not content with annihilating Bichat, he has been immolating the learned, lucid, and eloquent Watson, "the illustrious Laennec," the erudite and original Andral, the distinguished Louis, *his* incomparible Grisolle and last but *not* least, *mirabile dictu! their* and *our* critic, our Reviewer himself.

1. Watson. As the remarks of this writer embody in a few words nearly all that is pertinent to the subject, we trust we shall be pardoned for quoting them in this place.

In Lecture xv, under the caption of "*Hemorrhage*—most commonly by *Exhalation*," this eminent author observes:

"Whence, then, and how, does the blood escape from its natural channels? Why, it exudes from the unbroken surfaces of organs, without any appreciable lesion of arteries, veins, or capillaries; just in the same manner as sweat oozes from the skin, mucus from the inner surface of the bowels, and serum or synoviæ from the membranes that respectively furnish those fluids; and probably by the very same outlets.

This certainly is a very remarkable circumstance, if it be true; and you will naturally ask what proof we have of its truth.

The proof is simple and I think conclusive. We examine the surface from which the blood must have proceeded; we wash and even macerate it; we employ the microscope to assist our powers of vision: yet we fail, after this careful inspection, to discover the slightest breech of substance or any appearance of erosion.

* * * * * * * * * * * * *

When blood thus exudes, we say the hemorrhage takes place by *exhalation*. It is a convenient word, and will spare circumlocution. What the vessels or outlets to which we give the name of exhalents are; whether they be branches from the capillaries not large enough in the natural state to admit the red particles, or whether they be mere pores in the sides of the capillaries; these are points concerning which we have no positive knowledge. We know, indeed, that such channels must exist, though we cannot demonstrate or see them; and we know that while every part of the body is in a state of health and integrity, they do not allow the blood, as such, to pass through them.

I am aware that my learned colleague, Dr. Todd objects to this doctrine of *hemorrhage without rupture*, even of capillary vessels: arguing that if the red corpuscles of the blood which measure from $\frac{1}{4,000}$ to $\frac{1}{3,000}$th of an inch in diameter, could pass through lateral pores in those vessels, such pores must be large enough to become visible under the microscope. But on the other hand, Mr. Wharton Jones, who is also well versed in the use of that instrument, declares that the red corpuscles "can readily accommodate themselves to vessels of a diameter less than their own." However this may be, the distinction is broad enough between hemorrhage from a palpable leak in a large vein or artery, and hemorrhage from innumerable capillaries in which no rent can be demonstrated. Treating, then, this question of rupture according to the old maxim, that *de non apparentibus et de non existentibus eadem est ratio*, I shall venture to adhere to the term *exhalation*."*

*Lectures on the Principles and Practice of Physic, 2nd Amer. ed. pp. 163-4.

Laennec. "In the actual state of the science," observes this writer, "it may be affirmed that the greater majority of cases of mild or slight hemoptysis consists in a simple diapedesis or *exhalation* of blood from the surface of the bronchial mucous membrane."§

Louis. "As to the mechanism of hæmoptysis, as it is not rare to observe this symptom, in every degree, even at the commencement of the disease, when the existence of a cavern cannot be suspected, it must *necessarily* be considered as the result of *exhalation.*"*

Andral. "The mucous membranes often become the seat of *sanguine exhalations,* more or less abundant; of which we witness examples in hæmoptysis, hæmatemesis, menorrhagia, etc."†

Hæmoptysis is merely a *sanguineous exhalation*"‡

Grisolle. When after a hemorrhage from a mucous tissue, we can neither perceive any erosion, or solution of continuity, it must be admitted, that the blood has been *exhaled,* by a veritable secretion, by a mechanism analagous to that, which produces the secretion of mucus, serum or perspiration.

When we examine in a cadaver, an organ, which during life, has been the seat of an idiopathic *sanguineous exhalation,* (*exhalation sanguine essentielle*) there is found no appreciable modification of its structure. The ancients were then in error, in supposing that in such instances, there always existed, some manifest erosion of the arterial and venous vessels. (Grisolle had evidently never read Galen. M.) This opinion has however been victoriously refuted, by the microscopic researches of Morgagni and especially by those of Bichat."‡

§Traité de l'Auscultation médiate, 3me. ed. Tome i, 246.

*Recherches, Anatomique, Patholegiques et Therapeutiques sur La Phthisie, 2me ed. p. 207.

†Précis D'Anatomie pathologique, Tome, 1er. 37–8. Paris, 1829.

††Cowrs de Pathologie Interne recucilli par Latour, ii. 45. Paris, 1848.

‡Traité élémentaire et pratique de Pathologie Interne, Paris, 1857, Tome 1er. p. 624.

Howard. In relating the case of the daughter of his friend and partner, this author observed, that "the skin presented an icy coldness, and *exhaled*, a watery and exhausting perspiration." If as he declares that no such process as Exhalation can take place, "the fancied open-mouthed vessels," termed *Exhalents* "have no existence," then if he will permit us to adopt the Socratic method of answering a question by asking another, then we will reply to his reflecting interrogatories already cited, by inquiring, how is it possible that this "watery and exhausting perspiration" could have been "*exhaled?*"

We feel, that we owe an apology, for having thus dwelt upon this branch of the subject; but as we well know that our critic by the sheer force of assumption and extensive quotation has created the impression not only among the younger but also among some of the older members of the profession that he was specially learned upon the subject of this discussion, and that his views have thence derived an importance to which we do not believe they are entitled; we have deemed it our duty fully to expose the subject. Nearly all of the works which we have quoted so conclusively above have been frequently quoted by our critic in his "Review." Preferring to believe, that he has not purposely ignored the passages cited, in order to asperse our views and convict us of gross ignorance of elementary scientific truths, we will be charitable enough to hope, that he has never read the authors which he so frequently quotes—that as he has employed, as he informs us, a translator and collector to assist in our demolition, that he has probably sought the aid of a friend likewise to collect and arrange his arguments. Unhappily he has sought one whose apparent learning is mere patchwork, got up for the occasion, and whose views are a colliquative lientery of undigested materials.

The "Reason" demanded by our reviewer, which has led us to the conclusion that in this disease, the sanguinolent expectoration is an exhalation or hemorrhage, is based chiefly upon the vital phenomena—is a clinical inference

which he affects to despise, but by which, as we shall see hereafter, he is prudent enough to be altogether guided in his treatment.

When, as we have often witnessed our patients struck down in the cold stage of this disease, senseless, almost pulseless and cold, and discharging from their lungs a fluid which to all appearance seemed to be composed almost wholly of blood or bloody serum, the question has naturally arisen in our mind, can this expectoration be really the result of inflammation—Can inflammation, which is itself a re-action, an intense excitement of the blood-vessels exist in this condition when the vital powers are almost overwhelmed, and in which the patient presents the "counterfeit presentment of death." Is it possible, that these can be cases of ordinary pneumonia, as contended by our critic. Can phenomena, implying re-action occur before re-action. To these inquiries, reason, common sense, guides often as faithful and trustworthy as cadaveric developments, have answered in the negative. If not the result of inflammation to what other condition can the escape of the blood from its containing vessels be due. Why, simply, and it seems to us conclusively, to excessive engorgement of the capillary vessels. We shall pursue this subject no farther in this place, but in treating of the pathology of this disease we think that we shall be enabled to offer such an array of argument and testimony, in support of this view of the subject, as must lead to the same conviction in the minds of the most skeptical.

Hæmoptysis in Pneumonia. In his notices of our observations upon the expectoration in this disease, our reviewer complacently indulges himself in the following remarks:

"In regard to there being "a *pure* and *copious hæmoptysis*" in pneumonia, we agree entirely with Walshe, that if the expectoration be actually more or less profusely bloody—if there be *hæmoptysis* in short—the pneumonia is connected with the deposition of tubercules. If it ever exists in pneumonia uncomplicated by tuberculous deposit, it must be excessively rare in this section of country; for in a practice of nearly fifteen years in this region, we have never seen *hæmoptysis* in pneumonia a-

mounting even to a wine glassful, that was not associated with the physical signs of phthisis, or in which the future progress of the case did not soon afterwards present them, save in a single instance occurring in a woman about seventy, who had long-standing organic disease of the heart."

Whatever may have been the result of our critic's experience of fifteen years, and however *entirely* he may agree with Walshe, (who has not a line concerning Malarial Pneumonia in his whole work) in regard to the occurrence of hæmoptysis in pneumonia, we can truly reiterate, that in a practice of twenty years, it has fallen to *our* lot, to observe a pure and copious hæmoptysis, in which there were no rational or physical signs, of phthisis, or other pre-existing disease, and which the subsequent history of the cases gave no support to the opinion, that any tuberculous condition of the lung had ever existed. Indeed, it has so happened to us, never to have observed hæmoptysis in pneumonia when affecting our phthisical patients. We can recall cases to our remembrance, in which hæmoptysis occurred in pneumonia, in persons previously enjoying good health, and who are *now living* in perfect, and robust health, and we may remark that when occurring in such cases, that it seemed to be critical in its character, as it was speedily followed by favorable termination of the case. That the supervention of hæmoptysis in pneumonia, unconnected with phthesis or heart disease, is not an impossible occurrence, albeit that it has never occurred within the range of our critic's and Walshe's observation, we append the following from Chomel:

"*Critical Hemorrhage.* Hemorrhage more or less abundant, occurring in the course of pneumonia, has been sometimes followed by a speedy resolution, and has therefore been considered critical. The respiratory passages, the nasal fossæ, etc., have been the seat of these hemorrhages, according to the report of authors.

A young man, aged sixteen, was affected with pneumonia. The attendants ignorant of the nature of his disease, administered to him a glass of brandy and pepper. Doctor Mathy saw him when the inflammation was at its highest degree. Two hours elapsed before a venesec-

tion could be practised, during which a violent hæmoptysis occurred. The blood was so abundant, that it flooded the chamber from the bed of the patient to the door. Immediately after this hemorrhage, the patient was relieved from his disease. Doctor Mathy observed this young man for a long period afterwards, in perfect health.

According to the report of Dr. Duquesnel, Broussais cited in his Lectures an example of pneumouia terminating in resolution immediately after hæmoptysis.*

Contribution to Conservative Surgery.

BY JAS. H. DICKSON, M. D.

In the No. for May, 1861, of the London Lancet, Mr. Thos. Bryant, F. R. C. S., assistant Surgeon at Guy's Hospital, publishes a paper under the title of "Contributions to the Subject of Compound Fracture," being an analysis of 302 cases.

His introductory remarks are so sensible and pertinent, that I am led to transcribe a few paragraphs as preliminary to the case which I have concluded to draw up for the N. C. Med. Journal.

"Having recognized the fact that the science of medicine and surgery is one purely of observation, and that its principles and practice can only be regarded as sound, so long as they are based on facts, the result of carefully observed and recorded phenomena, the author goes on to state, that he believes it to be the duty of every practitioner, to communicate to his professional brethren, any *positive* material he may possess, and thus to add his quota

*Lecons de Clinique Médicale recueillies par Sestier iii. p. 240. Paris 1840.

in building up the noble art and science to which we have the honor to belong.

In conformity with this view, he brings forward an analysis of upwards of three hundred cases of compound fracture of the extremities.

The cases were all taken from the experience at Guy's Hospital within the last twenty years.

He then proceeds to the analysis of the whole number—302 cases.

17 or 5.4	per cent.	were of	the thigh.
193 or 63.9	"	"	leg.
36 or 11.5	"	"	arm.
57 or 18.8	"	"	fore arm.

Eleven out of 17 cases of compound fracture of the thigh proved fatal. Of these seventeen cases, nine underwent primary amputation, six died and three recovered. One underwent secondary amputation and proved fatal. Seven were treated on conservative principles, four died, three recovered. Ten were thus treated by amputation, and seven of these died or 70 per cent. Seven were left to natures efforts for recovery, and of these, four died or 57 per cent. The excessive mortality of these cases is the second point to which the author alludes. 64 per cent. of the whole number of cases proving fatal. In nearly sixty per cent. amputation was had recourse to, and seventy per cent. of these cases ultimately sank.

The author then passes on to review the opinions of some military surgeons on the subject, and points out how Dupuytren, Hennen, Larrey, Guthrie and others all agree, that in compound fracture of the thigh, from gun shot wounds "in rejecting amputation we loose more lives than we save limbs and also "that in the exceptional cases which result in consolidation, the condition of the limb is not encouraging.

He quotes MacLeod's Crimean experience, as indicating the same opinion, this surgeon advising amputation in all such cases when taking place in the middle or lower third

of the thigh, and hesitating only in a like recommendation in cases of fracture of the upper third, on account of the extreme mortality of such amputations. Malgaegne's and Bauden's experience is then quoted to prove the poor success of conservative treatment in these injuries, the latter surgeon saving two out of twenty-five cases and those two retained useless and deformed limbs.

The author then goes on to say that the experience of civil surgeons was not unlike that of their military brethren, although it is much more limited and expresses the opinion that a satisfactory result can rarely be obtained by conservative treatment except in the most favorable cases, that is when the subjects are young and the fracture is uncomplicated; when the soft parts are not materially damaged, nor the bone comminuted."

Coinciding fully with the general views of the author of this valuable analysis of the surgical experience of Guy's Hospital, upon the treatment of compound fracture of the thigh, I would at the same time strenuously contend that there are no cases in surgery which require to be treated more upon their individual peculiarities, than this class of accidents, and the following case is reported as exhibiting in a very striking manner, the value of conservative treatment.

It is true, that in some respects, this case falls into that class, which may be regarded as most favorable to this plan of treatment, inasmuch as the subject is young and the fracture uncomplicated, while the soft parts were not materially damaged nor the bone comminuted; and yet in another particular it was decidedly unfavorable to the attempt to save the limb, for the fracture was in the upper third of the thigh, the danger of which class of cases is recognised as extreme, by all experienced surgeons, as well civil as military.

Case of Gun Shot fracture of the femor, at the upper third of the bone successfully treated without amputation.

L. E. aged about 35 years, had the left thigh bone frac-

tured on the 9th of March, by a ball or slug discharged from one of Colt's revolving pistols. The bone was broken about two inches below the trochanter.

As his youth and good constitution were circumstances in his favor, and as the danger of amputation at the upper third of the thigh is very great under any circumstances, it was determined to be the best course to endeavor to save the limb, although this determination involved no inconsiderable risk of life.

A temporary bandage and splint were applied, which, on the 11th was replaced by a starched bandage and Jarvis splint, constituting quite an immoveable apparatus. After the starched bandage had become dry, a portion of it opposite the wound was cut out for the convenience of access to the wound for the purpose of dressing it. As great importance was attached to perfect quietude in the management of the case, it was enjoined upon the patient to keep as still as possible, and to assist him in doing so, he was kept fully and constantly under the influence of opium.

The resolution and firmness of purpose of the patient contributed very much to the attainment of this end and so important was this point regarded in the treatment of the case, that no attempt was made to procure an alvine discharge for thirteen or fourteen days.

The wound was dressed several times a day for the purpose of preventing the discharge from soaking into and softening the bandage as well as for the sake of cleanliness and comfort.

The discharge from the wound, at first of blood and then a sanguineous ichor, became after a few days purulent, but never profuse, and after gradually lessening in quantity, finally ceased, with the healing of the wound which took place at the expiration of the third week.

As the case seemed to be progressing very favorably, no attempt was made to renew the dressing, although from the subsidence of the swelling and the wasting of the limb, the starched bandage had become quite loose, until the end of

the fourth week, at which time, some indications of ulceration of the hip from pressure made it indispensable to renew the dressings. At this dressing the nates were protected by an application of Erupl. Saponis and Jarvis splint, was replaced by the anterior suspension apparatus of Prof. N. R. Smith, of Baltimore; and here I cannot refrain from speaking in terms of very high praise of this admirable invention of that distinguished surgeon. I regard it as unquestionably the greatest practical improvement in the treatment of fractures of the lower extremity which has been made in modern surgery, and if the distinguished Professor had made no other contribution to practical surgery, this alone would fairly entitle him to the high commendation of the profession and the lasting gratitude of society.

The relief afforded by the application of this apparatus to the previously constrained and almost immobile position of the patient on his back, was very great, and as a ligamentious union of some firmness had already taken place, he was enabled frequently to change slightly his position to his great comfort, relieving the fatigue of the muscles and taking off greatly from the tedium of his confinement.

By the aid of this admirable contrivance the case proceeded uninterruptedly to a cure and at the expiration of the eighth week from the reception of the wound the patient was enabled to leave his bed and get on crutches.

It would thus appear that as little time was consumed in the cure of this case of gun shot fracture occurring in the upper third of the thigh (regarded by all practical surgeons as the most dangerous class of cases,) as would havebeen required for the consolidation of a simple fracture.

The limb though shortened about an inch and-a-half, promises to be a very useful one.

I beg leave to present this case to the consideration of our nascent military surgeons as furnishing some encouragement to them to attempt the saving of limbs, which the

established cannons of the art would unhesitatingly condemn to the amputating knife.

It does not, of course, justify an indiscriminate attempt to avoid amputation in this class of accidents, but it may well afford a plea in abatement of a hasty resort to that sharp, painful and dangerous alternative.

NOTE—Dr. Smith's anterior splint would have been applied earlier in the treatment but that the case had been on hand for some weeks before the publication of his paper describing its construction and application in the Amer. Jour. of Med: Sciences.

Diseases of Burke County.

Read before the N. C. Medical Society, at its Annual Meeting in Morganton, May, 1861.

BY C. HAPPOLDT, M. D.

The county of Burke, embracing an area of about four hundred and fifty square miles, extends thirty miles in a southern direction from the parallel 36°, having an average width of about twenty miles. The Blue Ridge crosses its north western border, and a range called the South Mountains extends along its southern. The Brushy Mountains in Wilkes county on the east, and the distant range of the Black, on the west, with the numerous intervening spurs of the Blue Ridge and South Mountains, appear from Morganton, completely to environ the county.

The surface of the country is very undulating and broken, and in many places rocky; nearly the only level lands being the river and creek bottoms. These latter are almost invariably fertile; the uplands, where not too steep, are well adapted to the growth of wheat and other cereals.

The county is traversed from West to East by the Catawba river; and is also drained by the Linville and numerous smaller streams. Its average altitude is about eleven hundred feet above the level of the sea.

Its geological formation is of the Transition or Metamorphic series, with the exception of the mountains which are granite or primary.

A peculiar feature of the South Mountains and of some of the higher hills, is that the fruit crop never fails; owing, it is supposed, to these zones being above and below the region of *killing* frosts. These mountains present another peculiarity of having an exceedingly fertile soil, composed of humus and vegetable detritus, in some places to the depth of several feet, upon their very summits.

From Morganton there is a beautiful and extensive view of nearly the entire county, with all the mountains which have been mentioned. The scenery, as viewed from this point, has been characterized by a late writer as being the most magnificent on the eastern slope of the Blue Ridge.

The climate is delightful and salubrious, being neither humid nor dry; and the temperature in summer, except during a few days in June and July, rarely rises above 75° during the day.

With a population of about 8000, scattered throughout the area described, it can well be conjectured that epidemic diseases are rare, and endemic unknown. Zymotic affections have prevailed in the surrounding counties, and in those adjoining to the west of the mountains; but they have as yet, scarcely sojourned here. Diphtheria, a year ago, ravaged Iredell and Buncombe. It left Burke unscathed.

Malarial diseases do not now occur as they did many years ago, in a certain low-lying-level valley, about five miles from Morganton. It was ascertained that at the time of the appearance of Intermittent fever, a gentleman residing in this valley changed the course of a stream; and to affect this thoroughly, felled and threw into the former channel, the trees which grew upon its margins. This change, made where

the escape of water was sluggish, would, it is supposed, be sufficient to account for the generation of malaria, by the decomposition of the decaying woody-fibre, and the vegetable detritus collected in the stagnant pools of the occulated stream.

It is not known that affections attributable to a malarial origin, have ever occurred, at any time, in any other part of the county. For the last five years they have disappeared even from this valley.

There may be said to be no diseases peculiar to this county—those of an inflammatory and typhoid character are most common.

During the summer and autumn of 1855, Dysentery of a grave and chronic form prevailed very generally. In some of the most salubrious localities—on elevated points—and near the mountains many fatal cases occurred. The disease in the great majority of cases was not intractable. The opium, saline and alkaline treatment was generally instituted with success in acute cases; in chronic ones, the internal administration of the nitrate of silver seemed to effect cures.

During the years 1856 and 1857, Dysentery still occasionally occurred.

Typhoid fever made its appearance, to a limited extent, in the winter of '57 and '58. A majority of the cases were very mild, and some of the persons attacked were not confined to their beds. There were, however, a few malignant and fatal cases.

In the early part of the Summer of 1858, a severe case of Typhoid dysentery occurred in an elderly lady who had just returned from Iredell county, where Typhoid fever of a very severe grade, was and had been prevailing, and where the mortality had been very great.

Shortly after the fatal termination of this case, Typhoid fever broke out among other members of the family. Two of these patients were young and robust ladies, who presented the characteristic features of the disease, as regards

symptoms and duration, so as to render an incorrect diagnosis impossible. Yet there were peculiarities which it may be worthy to note: The pulse instead of being frequent, was unusually slow, averaging in both cases, throughout the continuance of the disease, about forty beats to the minute; while the skin was generally cold, and frequently covered with clammy perspiration. Besides using those measures which were calculated to regulate the secretion, tonics and stimulants were exhibited from the beginning to the termination of the attack, and, as the sequel proved, with good effect.

The fever spread among the negroes of the plantation, attacking about one half of them, and proving fatal in one tenth of the cases. From this point it extended throughout the county, chiefly appearing among the negro population; and not attacking the whites until the subsequent year, when it occasionally occurred in detached localities, being attended in some cases with hemorrhage from the bowels, when it almost invariably proved fatal.

Mercurials and salines were generally exhibited at the inception of the attack, and the bowels occasionally moved subsequently by castor oil or other aperients. Refrigerent diaphoretics, and opiates constituted the chief medication in the milder cases. Veratrum viride and quinine were sometimes used, but with no benefit. When the tongue was smooth and dry, and tympanitis present, turpentine was administered in small doses, frequently repeated, and when it did not produce strangury, it appeared never to fail to produce a decidedly good effect. Chlorate of potassa was prescribed in many cases with signal success. It is a remedy deserving of more confidence in all diseases where there is a deficient oxidation of the blood, than perhaps any other single article of the Materia Medica.

Scarlet fever occasionally occurred during the year 1859. In some localities the cases were mild and uncomplicated, and all terminated in recovery. In others, the disease as-

sumed a malignant character; many being ushered in with convulsions, and speedily terminating fatally.

Some of the physicians used inunctions with lard—repeating the application whenever the skin became dry—during the continuance of the disease; and there is reason to believe that no other mode of medication could be more successful, or so effectually prevent the exfoliation or desiccation of the cuticle, or ward off the other dangerous sequellæ.

In the spring of 1860, and during the ensuing autumn and winter, an epidemic which may be pronounced catahrral, made its appearance among the negro population chiefly, and was in many cases fatal: No form of treatment appeared to have any effect in arresting a fatal termination in the gravest cases. It was frequently complicated with Pneumonia or Bronchitis; but when there seemed to be no lesion or internal congestion or inflammation, the worst results ensued. Among the younger rail road hands, three cases were ushered in with convulsions. The cerebrum was the chief seat of disorder, delirium supervened, and death terminated the attack.

During the winter of 1860 and '61, Rheumatism was more than usually prevalent. Several persons above thirty years of age, were for the first time attacked with the acute and inflammatory form. The sub-acute and chronic varieties were more than usually prevalent throughout the country. No fatal cases occurred.

Since spring Dysentery has again prevailed, apparently of an epidemic character; and added a few fatal cases to the mortuary record of the county. No special form of treatment or particular article of the Materia Medica appeared to act specifically. Mercury, ipecac and opium, salts and paregoric, dover's powder and cream of tartar, creosote and morphine, and even sulphur and the other so-called specifics failed to arrest the symptoms they were given to relieve. Careful nursing, attenton to diet, simple means to control the symptoms, to restore and correct the secretions, and to

aid nature in her efforts to re-establish health seemed the most rational method of procedure.

It may not be out of place to mention here a case of arrest of development in a negro child, which occurred two years ago. The infant had reached its full term, and appeared strong, and well-formed in every particular with the exception of the entire absence of the abdominal muscles. A thin and transparent membrane, apparently the peritoneum, covered the viscera, through which the intestines were distinctly visible. The little being seemed well and nursed heartily for three days, when peritonitis set in, and abruptly terminated its brief existence.

The county presents one case of, what the sufferer himself denominates, Vernal Asthma. The affection, as its appellation imports, makes its attack in the spring as soon as the pollen from the earliest vegetation diffuses itself through the atmosphere; and it continues to go through its phases until the forest blossoms have all matured. It affects not only the mucous membrane of the bronchiæ, but also that of the nares and eyes, and in the order here mentioned.

A withdrawal from rural districts during the period of inflorescence has been found to secure, for that season, an immunity from an attack. The subject being a member of the profession, it is to be hoped that he will report his own case, as he has promised to do.

Letters from S. S. Satchwell, M. D.

PARIS, April 3rd, 1861.

CHARLES E. JOHNSON, M. D.—

Dear Doctor:—The treatment of fractures in the Parisian Hospitals, does not in the main, differ materially from our American methods. Success here, as every where, does not alone depend upon a proper adjustment directly after the accident, but upon careful attention subsequently. The appliances used are hardly the same in any two Hospitals, though leading principles are observed in all. Variety in taste and preferences, so characteristic of French surgery, is manifested in the numerous kinds of splints and bandages, although the mechanical means of the French for treating fractures, are, as a general rule, more simple and cheaper than those used by a large majority of American surgeons. Maisoneuve, Chassaignac, Velpau, Nelaton, and other distinguished practitioners here, hold to the standard doctrine of extension, but it is ignored by a few, the most noted of whom is Jobert, of the Hotel Dieu. He disregards the principle altogether, and simply places the limb in a straight wire box, confining the member to the bed by bandages. He thus treats fractures whether the point of injury be above or below the patella, above or below the elbow, and whether simple or compound. I see almost daily in his service fractures treated in this way. He says that extension retards union and recovery—does not prevent shortening, and adds to the annoyance of the patient. He contends that by thus ignoring extension he cures his patient easier and quicker, and has fewer cases of shortening in proportion than those surgeons who condemn his practice. Syme of Edinburg treats fractures in the same way in the main. Whatever may be said of such anomalous proceedings, few practitioners agree with them, and such treatment in Amer-

ica would, if unsuccessful, render the practitioner very liable to a suit for malpractice.

In fractures of the leg and forearm, Velpau uses dextrine bandages. For the same sort of cases most of the Hospital surgeons here use plaster of paris bandages, and some of them splints made out of the same material, applied while in a soft state to the injured limb. This plaster of paris material is preferable from the fact that it hardens with more facility, is unaffected by moisture, and does not, like dextrine, mould, and seems well adapted to the purposes intended. It is prepared by simply mixing plaster and water to the consistence of cream, then a bandage of proper length is dipped in it to saturation and applied by roller to the splint. Made also by saturating cloth in the same way. This splint, applied on both sides of the limb generally, in a state of softness, soon hardens and thus fits closely. In the case of the forearm it is made to come well down to the fingers and thus the better to keep the parts in the coaptation. It is objected to this method, that after reaction inflammation and swelling may interfere with the proper progress of the case, and then that these solidified appliances are in the way. If the surgeon fears this, he leaves off the roller and merely uses the splints, which can be taken off and put on at pleasure and without the least difficulty.

This simple mode of managing fractures is very popular here, can be called into requisition easily in town or country, and is worthy of imitation. In fractures demanding extension, of course other means are to be used. Nelaton uses splints that enable him to examine daily and with ease the parts injured. He is very partial in fractures of the thigh to the use of Desault's splint modified by Sandbourn of Massachusetts. He generally prefers it whether the fracture is simple or compound. Its construction, as you know, is simple, consisting of a straight splint extending from the axilla to the foot and below, having an axillary pad and straps to go around the body, and to the

perinæum as a point of counter extension. Then, after the manner of Dr. Josiah Crosby of New-Hampshire, are applied to each side of the thigh cuts of adhesive plaster extending from the point of injury to below the foot and attached to the straight splint, and thus is extension secured. A screw may be attached by which to regulate extension afterwards, and another splint is applied to the inner part of the thigh, as an auxiliary aid to proper adjustment. A bandage around the whole may or may not be applied, as circumstances indicate. This apparatus, so simple and effectual, and so easily got up, when called for by emergencies, commends itself to the profession. The profession here are not so fond of complicated contrivances in managing fractures, as our practitioners are. Fracture boxes, artistically arranged inclined planes, and other costly and showy paraphernalia for attaching to the limbs, are not to be seen in these Hospitals, so far as my observation extends.

The treatment of affections of bones by removing the diseased portion, leaving the periosteum as a nucleus of separation finds much favor here. And in this connexion I may remark that I have found French Surgery more conservative than represented. I have not seen that the French Surgeons are so fond of unnecessarily using the knife, as many assert; on the contrary their custom as I have noticed, is to do all in their power to save limbs without amputation. Evidence of this is furnished by their devotion to this process of saving limbs. It is wonderful what nature is capable of doing in this and other diseases and is a cheering proof of the onward and conservative progress of our art. French practice daily affords new instances of the successful separation of diseased bones that have had the affected part removed by the surgeon, the periosteum alone remaining. The journals frequently contain reports of cases that have been cured in this way, that during many years of suffering presented, apparently no other means of relief than by amputation. Massanouve lately reported an interest-

ing case of the kind where the entire tibia was diseased, and fast decaying, and after its entire removal, except the periosteum, nature soon made another new tibia every way serviceable and complete. He reports another similar case, in which one half of the lower jaw was excised for disease, leaving the periosteum which was seized upon by nature, and in her marvelous powers a new bone was substituted in place of the old one.

Yours, &c.

S. S. SATCHWELL.

PARIS, April 25th, 1861.

Dear Doctor: Military Surgery in our country has advanced with a slow step, not well assured, and in this respect is an exception to the ordinary course of medical science. It has had none of those brilliant marches which have signalized from time to time the advancement of most of the branches of medicine and surgery among us, but has grown by access of progress, if I may so speak, separated by long intervals of repose. As a nation we have rejoiced at this, but dissensions have brought upon us rare and difficult times, demanding us to look to our professional resources, and to feel a new stimulus for observation and research in this direction.

I only desire now to call atttention to a single stone in the structure, viz: primary and secondary amputations. If we content ourselves with reading early standard works on this question we shall be truly embarrassed to make up an opinion. Faune has contended with rare talent, that primary amputations are blameable, and that it is necessary to wait until the first inflammatory symptoms are calmed. The observations upon which this French writer bases his opinion and the reasons he adduces have seduced a good number of surgeons who at the present day accept his views. On the other hand Boucher has declared himself champion of the contrary opinion and defended primary amputations.

The academy of Surgery in Paris interested themselves in the matter and crowned the memoir of Faune for the following reasons:

1st. Amputations augment the stupor and in consequence aggravate the condition of the patient.

2nd. The enormous irritation which necessarily follows such an operation is added to that which the wound has already determined.

3rd. The taumatic fever which follows an amputation ought to be more severe in a subject full of life and gorged with blood than in one already enfeebled by suppuration.

This was in the latter half of the last century, but time and experience have shown the fallacy of such reasoning. In one of the naval combats of the first French empire with England a great number of the wounded suffered immediate amputation. Sixty of them were placed in the Military Hospital of Brest under the care of the celebrated Duret. Two only died with tetanus; all the others were cured. The Surgeon of the French vessel, Temeraine, which was taken by the English, wished to delay the amputations of the wounded until his arrival in port, and he had the mortification to see forty of the one hundred and ten patients under his care die during the passage.

M. Jobert the *habile* surgeon of the Hotel Dieu, and who has had great experience in Military Surgery, indicates the following conditions in which amputation ought to be immediately practiced.

1st. In case of a member irregularly swept away by a shot.

2nd. In case of fracture complicated by the opening of one of the large articulations.

3rd. In case of the bones of an extremity reduced to numerous fragments and a pulpefying of the soft parts.

4th. If a large articulation is fractured and its ligaments torn.

5th. If with much disorganization of the parts a large arterial trunk is separated.

This is the recognized rule at the present day, and one adhered to generally by American Surgeons. Dr. John L. Stone, surgeon of the Bellevue Hospital, New York, has given in the November number, 1849, of the New York Journal of Medicine, a complete record of the results of primary and secondary amputations, and he sums up as follows:

Primary amputations of the upper extremities are to be preferred both in military and civil practice; in both, primary amputations being more successful than secondary.

Primary amputations of the lower extremities are twice as successful as secondary in military practice.

The Parisian Hospitals employ anæsthetics, not alone in amputations, but in all important operations. They use, not ether, nor chloric-ether, but always chloroform. They entertain none of those fears in its employment which constitute objections so often with our operators, but the Surgeons here use it freely and unattended by any of those injurious and even fatal consequences that are urged against it elsewhere. They do not believe that it tends to prevent or retard union by the first intention, as some contend, nor that it exerts influences more depressing upon the system than follows operations without its use.

Yours, &c.,

S. S. SATCHWELL.

SELECTIONS.

Practice of Medicine.

Camp-Dysentery.

I consider the various forms of Dysentery, or Diarrhea, that prevail in camp, as being so intimately related to each other, it would serve no good purpose to treat of them separately. Sir George Ballingall treats of them under the title of Tropical Dysentery. The different features the various forms present, are probably due to climate or other accidents. Their prevalence and fatality in armies has always been marked; I have never known troops in campaign to escape it. It undoubtedly differs from ordinary dysentery in many respects. Thus Pringle remarks: "it is least known out of the field, and often general and fatal there." There were 23,000 cases in the Peninsular army, and nearly 5,000 deaths. It is most prevalent and fatal in hot climates. In India, the deaths from this disease are double those from fevers. In the Florida war, in 1836, it was most extensively prevalent and fatal; and the same is true of the Mexican war; and there the deaths from it, among the new troops, were double those of the old army. Its causes are principally violations of the laws of hygiene I have treated of in the preceding Chapter. I am confident, from my own observations, it may be very materially controlled by a due attention to these. Sir George Ballingall assigns, as the remote causes, heat combined with moisture; immoderate and indiscriminate use of fruits; abuse of spirituous liquors, exposure to currents of wind, and night dews.

Pringle refers, also, to heat and moisture as remote causes, and observes that seasons favorable to the generation of flies, caterpillars, and other insects, whose increase depends upon corruption, are most productive of dysentery. Rush coincides in this opinion, and says, the remark applies equally to bilious fevers, and has often been verified in Philadelphia. Pringle also remarks upon the similarity of the causes, remote and exciting, of malarial fever and dysentery, and says of the men exposed to the same causes, some get one, some the other and some both—such as after fatigue upon a hot day, sleeping upon the damp ground or in wet clothes.

This is one of the most prolific causes of camp dysentery, and one to which raw troops are particularly exposed. The regular soldier, upon his arrival at the ground selected for the camp, will relieve himself of his knapsack and arms, and then, while waiting for the train with the tents, etc., will collect wood for the camp fires. When the train comes up, he attends to the pitching of his tent, the preparation of his evening meal, washing his feet, drying his clothes, etc. When everything is done, he lies down and passes a comfortable night. The raw recruit, on the other hand will throw himself on the ground as soon as he halts—perhaps go to sleep, get thoroughly chilled, puts off his preparations for the night until the last moment, and, in consequence, has a badly-cooked meal and an uncomfortable tent, imperfect sleep, and rises for the next day's march but slightly refreshed. I point out this error that it may be hereafter avoided.

Pringle considers camp dysentery to be contagious, though he admits the infection to be less virulent than small-pox or measles. He says: "In camp, the contagion passes from one who is ill, to his companions in the same tent, and from thence, perhaps, to the next. The foul straw becomes infectious. But the great source of infection seems to be the privies, after they have received the dysenteric excrements of those who first fall ill.

Copland mentions the "fruit of hot climates, from his own observation and that of others," as a frequent cause. In my opinion, the fruit of all climates, indiscriminately used, will very generally excite it. There was a notion prevailing at Tampico, while I was there, that the banana was a remedy for it, though the inhabitants say that a drink of brandy, after eating bananas, is sure to make one sick. My observation does not confirm the inocuousness of the banana. I had, myself, a severe attack of dysentery from a moderate indulgence in this fruit. I have seen, also a number of cases excited by the use of the fresh limes so abundant at Acapulco, on the Pacific. Copland enumerates, among the causes, "badly-cooked meat or other food; pork; sour or bad wine; minute insects or their ova or animalcules in the water used for drink." "Several agents determine inflammatory irritation of, and an inordinate flux of fluids to the mucous surface of the large intestine, and their usual results" . . . . "exposure to cold, or cold and moisture, especially during or after great atmospheric warmth."

"Suppression of the secretions and excretions, poured into the large bowels, especially the biliary fluid, and accumulation of mucus in the follicles, are not altogether without effect in causing or prolonging the disease, especially of some of its protracted states; and several of the exciting agents, particularly cold, moisture, and malaria partly act in this way."—(Copland). Copland then gives the causes that disorder, or, as it were, corrupt these secretions and the circulating fluids—unripe fruit, blighted grain, flesh and viscera of diseased animals, water holding putrid animal and alkaline substances in solution. They exert a septic action upon the mucous surface, the circulation, and ultimately, the soft solids."

He also notices the convertibility of malignant fevers and dysenteries, by the concurrence of the exciting causes of the latter with the causes of the former. The causes that have most impressed me as exciting the disease are, in

addition to the influence of cold and moisture suppression of secretion, the cutaneous especially; errors in diet; neglect of ventilation of tents, quarters, and straw; drinking impure, or too much, water; bad police of camp; infection from the men's sinks. I must say a word or two upon the last.

In regular encampments, the place for the men's sinks is one hundred and fifty paces in front of the color line—those of the officers, one hundred paces in rear of the train. But when convenient, the regulations allow the sinks of the men to be placed in rear or on a flank. Both are to be concealed by bushes. Now, in my opinion, the choice of these places should be determined by the direction of the prevailing winds at the place of encampment, so that the offensive effluvia shall be carried away from the camp. There is no doubt, in my mind, that dysentery has been frequently increased in camp, by a neglect of this precaution. The usual method of constructing these sinks, is to dig a shallow trench, some eight or ten feet long, to drive a strong forked stake at each end, and to place a strong pole from one fork to the other, for the men to sit on. These sinks should be at least five feet in depth; immediately after reveille, not less than six inches of earth should be thrown upon the deposits of the preceding day and night, and when they are filled to within two and a half feet of the surface, they should be completely filled up and new sinks dug. If it can be procured, I would strongly recommend the following disinfectant, as cheap and effective, for use both in camp and hospital sinks; I have transcribed it from the last volume of the Annual of Scientific Discovery.

Sulphate of iron and alum are dissolved in water, till the solution is of the strength of 55°, it is then evaporated for eight or ten hours, during which eight or ten per cent. of lime is mixed with the compound—it is evaporated to a hard compact cake, finally run into forms, and exposed to the air till it is perfectly dry, then reduced to powder. It

may be kept in this form, or in solution; it has no odor. It instantaneously disinfects putrifying matter, privy vaults, etc.

There are many other circumstances, in addition to those I have already mentioned, that go to show a relationship between camp dysentery and malarial fevers. Johnson, in his work on tropical climates, says, in this disease the functions of the liver and skin are always implicated. "He will defy any one who has carefully watched the disease, at the bedside, to produce a single instance in which these functions were carried on in a natural manner, at any period of the disease."

Sir Simon Howard, of the East India service, in an alarming epidemic of this kind, caused the men to be kept in barracks out of the sun, from 8 A. M. to 4 P. M., with the effect of diminishing the disease in a fortnight, and converting aggravated dysentery into common diarrhea. This shows the affinity between the acute dysentery or colonites, and the hepatic flux of Ballingall. It is the hepatic flux, however, that within my observation, has been most prevalent in our camps, and most prolific of the chronic cases.

Symptomatology.—There will be no difficulty of diagnosis in these cases. The symptoms of ordinary dysentery are well known—the most prominent of which are more or less fever, frequent calls to stool, with griping and tenesmus, bloody and mucous dejections, small in quantity. But in camp dysentery, we have every degree of extreme disturbance, from the more violent forms of acute dysentery, to a trifling looseness or diarrhea. The alarm of the patient will be in proportion to the violence of the attack; still there is no grade not liable to run into fatal disorganization of the bowel. The security frequently felt from the trifling nature of the attack, may betray the patient into fatal neglect. A prudent surgeon will watch closely the habits of the men, and interfere at once when he finds a soldier running too frequently to the sink. He will do well

to walk along the line at the stated roll calls, and observe the sanitary expression of the men.

Sir G. Ballingall says, "hepatic flux more frequently attacks those who, from habit or constitution, are less liable to violent inflammatory attacks, and more prone to irregular and disordered secretions of bile. These men are those of the nervous and melancholic temperaments; but I have found it as frequent in the sanguine, phlegmatic, and mixed temperaments, as any others. In fact, as far as my obsertion goes, we may take this form as the type, and refer all others to it; superadded causes determine the grade, either in excess or deficiency. It comes on very often as common diarrhea; the man complains that he has to go to the rear half a dozen times a day—he does not notice the character of the discharges—they vary in quantity, profuse or the reverse; next he will have griping and colicky pains about the umbilicus; then the discharges are unnatural, frothy, like yeast, too light in color; he is flatulent, loses his appetite, complains of "inward thirst," sometimes of nausea—his skin becomes dry, pulse quick. In the more chronic cases, the appetite is increased, and can not be restrained; the man emaciates rapidly, the tongue is furred, or of all colors, from white to the darkest bilious hue. Now, if the disease goes on unchecked, the appetite may improve, the tongue become cleaner, the fever less, but the flux continues, and emaciation goes on; the dejections assume, in their course, all sorts of appearances—serous, murcous, gelatinous, sometimes that of a uniform fluid feculent matter, more or less offensive, sometimes containing particles of food undigested. The older authors called those whitish particles, corpora penguia (Aretæus), sarkos (Hippocrates). Pringle examined them in some of his cases, and found them to be particles of cheese. Copland notices that the discharges vary from a white albuminous, or white of egg appearance, to a dark olive green or greenish black; sometimes marbled, or on one day like chalk and water, and another like a dark jelly or green fat of turtle. Blood is often either so intimately

mixed with the dejections, as to give them a uniform brick red color, or quite distinct and fluid, or partially coagulated. The discharges are sometimes as black and as thick as tar. The uniform brick, or darker red discharge, occurs frequently toward the close of life, and is apt to mislead the surgeon —it looks like an improvement in the character of the discharges, but it is generally a fatal symptom. Sometimes we have streaks of pus in the discharge.

We have increase of fever at night—the pulse becomes irregular, intermitting, frequent, weak; the tongue glazed, red, fissured, or like typhus; the skin harsh, dry—looks as if the man had not washed or changed his shirt for a month —the surface is scurfy or pulverulent; the emaciation extreme, the ears transparent; eyes glassy; the lips white; the teeth covered with sordes; the lips retracted so as to show the teeth—cadaveric smell; syncope if the man is raised up; then perhaps low delirium for a day or two, and the man dies. Sometimes there is a cessation of the discharges for 24 or 48 hours—the man thinks he is beginning to mend—then an inclination to stool is felt, the man gets up, staggers to the vessel, falls over and is dead.

The urinary secretion is variously affected during the progress of the disease. In the earlier stages it is not uncommon to have vessical irritation, with frequent micturition, and diminished excretion. This is more common in the "colonites" variety; but in the latter stages the quantity of urine is normal, 30 to 40 ounces daily, but of a low specific gravity 1.002; this gives but 4.66 of solids in 1000, which is less than one tenth of the normal proportion. This may account for the typhoid symptoms we then see.

Pain is not constant in the progress of the disease; still pressure over the sigmoid flexure of the colon, will generally discover some tenderness, particularly in the earlier stages. In the progress of the case, the abdomen becomes hard and inelastic.

The duration of the disease is from a few days to four months. I have known acute dysentery prove fatal in 24

hours; death may come at any time, it will be governed by the severity of the attack, the character and seat of the original lesion; the powers of resistance in the constitution, etc. But camp dysentery is essentially chronic in its tendencies, I have known it to last for years, and the patient eventually recover; this, however, is rare.

Autopsies in these cases usually reveal the omentum retracted to the arch of the colon, demented of fat, a mere shred; sometimes it is adherent to different portions of the intestine, but this is an accident due to local complication. The external coats of the intestine are scarcely altered—some slight change of color perhaps. Peritonitis from exhaustion may leave some traces here, but is not common. The small intestine is distended with flatus; the large, contracted, sometimes as if strictured. Parts of it give a sense of thickness, as if swollen, particularly about the sigmoid flexure, and occasionally the appendix vermiformes. The colon is frequently adherent to the other viscera. Sometimes, in the rapid cases, the disintegration of the inner coats extends through the peritoneal coat, so that the gut is torn asunder in running it over in the usual way. But when the intestine is laid open, extensive destruction is disclosed; ulcers of all sorts and sizes stud the large intestine, clustered more especially about the sigmoid flexure, but extending throughout it, and frequently passing into the ilium. Inflammation of the mucous coat of all the small intestines is not unusual. Sometimes the ulcers are raised, and their bases indurated. Again extensive sloughing of the mucous and submucous coats is seen, and the intestine gets torn by the slightest strain, even by its own weight. Invagination is occasionally met with, or perforation of the intestine, inducing fatal peritonitis.

The remaining viscera rarely escape; the most frequent complications are those of the liver, next of the spleen; the pancreas is occasionally involved. That the gall bladder should retain viscid black bile is to be expected, and

also that the mesenteric glands should partake of the irritation of the corresponding portions of the intestine.

Johnson thinks the liver complication an essential part of the disease. O'Brien investigated this point carefully in an extensive epidemic in Ireland, and found the liver involved in one half of the cases only, the spleen in one quarter, the small intestine in two thirds, the colon and rectum in all. Abscess of the liver is not so common as Johnson supposed. In India it may be due to other causes, such as engorgement of the gland from climate and diet. In Mexico, it is very common among intemperate pulque drinkers.

The symptoms and morbid appearances show the disease to be one of the chylopoetic viscera, *sometimes* involving them all, and *always* the intestinal canal, *i. e.* leaving there indications of the most destructive structural changes. That the disease is essentially inflammatory, seems to have been the prevalent notion of its nature. Pringle is inclined to that opinion, and Ballingall expresses it emphatically. I think it decidedly congestive. Copland is the first author I know of to admit this, but with caution, and many qualifications. He, however, says finally, in speaking of hepatic flux: "In most such cases, and in many of the simple as well as the most severe forms, congestion of the portal vessels and obstructions of this part of the circulation, are concerned in the production and perpetuation of the dysinteric symptoms."

This, in my opinion, is always the point of departure of camp dysentery. Suppressed or vitiated secretion is its first result, and these act and react on each other, and we have fullness of the vessels, or over-distention, resulting in the destruction of their elasticity, in both liver and intestine. This must be relieved somehow, either by nature or art, or it goes on to inflammation, and this the more intense the further the diseased part from the heart. This view is fully justified by a consideration of the most important recognized causes: suppression of the cutaneous tran-

spiration, throwing the fluids upon the center; malarial infection, whether from the animalculæ of Kircher and Linnæus or the cryptogamous spores of Mitchell; venous plethora, from too much water, or water containing putrid infusoria; abuse of fruits; use of provisions of bad quality, or badly cooked, etc. The error has been in considering the flux to be the grand feature in the disease, whereas this is only symptomatic of more important and remote disturbance.

In camp dysentery, the patient seems eventually to perish of the combined effects of inanition and exhausting flux, analagous, at least, to hemorrhage. So long as his fat suffices for respiration, he may survive, emaciation constantly progressing, but beyond this limit, he fails. I may here remark that whatever may be the temporary condition of the flux, and however hopeful the patient from its apparent dimunition or suppression, so long as *emaciation* is progressing, the man is *not* getting better.

In my view, we have then, in camp dysentery—

1st. Congestion of the portal system.

2nd. Inflammation, particularly of the mucous coat of the large intestine, but sometimes involving other organs and tissues.

3d. Vitiated condition of fluids concerned in assimilation of the food, with a consequent want of adaptedness of the latter to the wants of the economy.

4th. Probably paralysis of the lacteals and exhalents, so that the one does not take up the chyle, and the others pour out the thinner portions of the blood in abnormal and exhausting quantities, as well as sometimes the blood corpuscles themselves—indicating, moreover, serious implication of the ganglionic system in the assemblage of morbid phenomena.

Treatment.—The peculiar views of authors, and the prominent symptoms of the disease, have naturally suggested the treatment they recommend. Thus the "inflammation" and "flux" notions would indicate astringents and anti-

phlogistics. Pain would call for anodynes, etc. Pringle, indeed, thought bleeding "unnecessary, yet conducive to the cure." "Still," he says, unless the fever is kept up by inflammation not peculiar to the disease, *repeated* bleedings are unnecessary and hurtful, as in most distempers arising from a putrid cause." In weakly habits and few feverish symptoms, he wholly admits that evacuation.

He speaks well of emetics, and used in his early practice, wine of glass of antimony, which he had observed to be the best medicine in these cases, for relieving both stomach and bowels; but the roughness of its operation, and the prejudice against it among other officers, induced him to substitute ipecac. Still, among the common men, he added to this one or two grains of tartar emetic. He observed that, whenever he gave the weaker or the stronger vomit, they were *most successful* when they *operated* by *stool*. The ipecac treatment has been revived of late, by Mr. Docker, surgeon of the 7th Royal Fusileers in the Mauritius. He says that, after repeated failures with other remedies, and a mortality of ten to eighteen per cent, he never fails with ipecac in large doses. He had but one death in fifty, and that from abscess in the liver, the dysentery being completely cured! "In all constitutions, robust as well as delicate, the result is the same. In the very worst cases, when the strength of the patient is almost exhausted, after the whole range of remedies has been tried in vain, the disease running its course swiftly and surely to a fatal issue, 90 grains of ipecac have been given, and forthwith the character of the disease, or, I should rather say, of the *symptoms*, has been entirely changed; for the disease itself is literally cured—put a summary stop to—driven out. The evacuations, from being of the worst kind seen in dysentery, have not *gradually*, not by any *degrees* however rapid, changed for the better; they have ceased at *once, completely*."

Mr. Docker, uses an emetic, and sometimes a purgative first; then he applies a sinapism to the epigastrium, and gives ℥j tr. opii; and while the patient is under the influ-

ence of both, he gives the ipecac. in a draught of bolus. I find, however, from his cases, that this acted by procuring *good copious evacuations*, and that turpentine, camphor mixture, etc., were required for chronic mucous discharges in the after treatment.

Pringle always gave purgatives; if the stools were not copious enough with his ipecac., he gave calomel and rhubarb. After purging, he gave an opiate at night; but he says, it is better to omit opiates altogether, than to give them before purging, "for, though they seem to give relief, yet, by confining the wind and corrupted humors, they tend to fix the cause, and render the distemper more obstinate in the end." Herein he differs, reluctantly, from Sydenham, who, though he did not omit purging in *epidemic* dysentery, yet at all other times he trusted to laudanum alone. Now whatever," says Pringle, "was the nature of those fluxes which he treated in that way, I must believe that such as are most incident to an army are of a less tractable nature, and, in general, can not be cured without repeated evacuations."

Sir George Ballingall says that *bloodletting* is the remedy upon which we must rely in the worst form, and in the inflammatory stages of dysentery; but he confesses that this opinion is grounded more upon the post-mortem appearances than upon any repeated or extensive experience of its beneficial effects upon the living.

Bampfield, also, insists upon bloodletting, but says, a large proportion of the practitioners in both Indies, not only discountenance the practice, but have never employed it. So Twining says, the cure of acute cases in plethoric subjects, should be attempted by the early and free use of the lancet. But he naively adds, after each general bleeding, twelve or fourteen leeches should be applied to the abdomen, when pressure reveals pain. Others recommend bleeding to be pushed ad deliquium; and the further we go back, the stronger is the testimony as to its necessity.

Of course, all these authors refer to the semi-acute form

of dysentery, in so strongly urging the use of the lancet; none of them would have thought of employing it in an ordinary case of hepatic flux.

Johnson and Annesly give calomel to the extent of one scruple to gr. ij. or gr. iij. of opium in twenty-four hours. Ballingall disapproves of this practice in acute cases, but gives strong testimony to its efficiency in chronic hepatic flux, and pushes it to ptyalism; whenever the exhaustion of the patient does not forbid, he perseveres with it until the natural secretions are procured. Profuse salivation he condemns, as increased relaxation and debility are induced, and the patient is rendered incapable of taking the little sustenance he might be inclined to.

The limit I have imposed upon myself will not permit me to follow Copland, through the elaborate therapeusis he has developed for the many varied forms of the disease and the symptoms it may from time to time present; they are all referable to, and deducible from, the same principles of local inflammation; vitiated secretion, and perverted ganglionic and animal nervous function being the pathological condition. My own observation and experience, extending now over a period of thirty years, have convinced me that, with proper attention to military hygiene, though we may not succeed in completely preventing the occurrence of camp dysentery among troops in the field, still, we can so limit its prevalence as to make it no longer formidable. In treating of the causes of the disease, I have endeavored to point out the hygienic errors men commit, and thus afford the means of obviating or avoiding them. To carry out effectively the sanitary precautions I have indicated, the medical officer must endeavor to avail himself of the assistance of the officers of the regiment, and especially of the company officers. He should point out to them the necessity of watching over the habits of their men, on the march and in camp; of warning them against the consequences of infractions of the sanitary law, and of interposing their authority to prevent them from indulging

in any of the practices we have endeavored to show are so prolific in inducing the disease in question.

When a man is attacked with any of the forms of camp dysentery, my constant practice is to give at once a purgative dose of sulphate of magnesia ℥j. combined with ¼ to ½ a grain of tartar emetic. If this does not procure copious catharsis, I repeat the dose the next day or theday after. My object is to unload the portal vessels, as well as to remove any irritating matters that may be present in the intestinal canal.

This being done, absolute rest is enjoined, and abstinence from all fluids for the next 24 hours. A spoonful or two of water at a time, to moisten the mouth, are all that should be allowed. At night, if the patient is restless, a few grains of Dover's powder will generally procure him a comfortable sleep. I have treated hundreds of cases successfully with no other medication, and I firmly believe that, in the great majority of cases of hepatic flux, no other remedies will be required. They may require, some of them, two or three days' abstinence from fluids, with rest, and a repetition of the saline carthartic, but these cases will not become chronic. When the symptoms are more severe, the case more obstinate, with pain and tenderness of the abdomen, after the purgation, I use, according to severity of symptoms, dry or wet cups to the abdomen, particularly over the sigmoid flexure of the colon. This I repeat from day to day, to keep up a constant counter-irritation upon the surface, by the one, or to institute an effective local depletion with the other. In acute dysentery with bloody flux, the cups cannot be too thoroughly applied. I have not mentioned leeches, because they can not be procured in camp. When there is much symptomatic fever, with dry skin, I have sometimes been obliged to use small doses of ipecac. or Dover's powder, to determine to the surface, but always after the preliminary evacuations. Opiates and astringents, in the beginning of the treatment, are worse than useless. They cause the loss of valuable

time, lull one into a false security, aggravate the congestion already existing, and frequently convert a perfectly manageable disturbance of the economy into a formidable and intractable disease.

In the more purely dysenteric cases, when the rectum is the chief seat of local difficulty, anodyne injections have long been favorite remedies. I can not say that I have seen any decided benefit from them. They do seem to allay tenesmus for a while, and thus procure some little rest to the patient; but from their frequent repetition, they become themselves sources of irritation, aggravate the sufferings of the patients, and are, of necessity abandoned. I can not speak much more favorably of injections of nitrate of silver. The relief that follows them is only temporary—they do not cure; still, when the sufferings of the patient are so atrocious as they sometimes are in the acute form of dysentery, any means of even a temporary respite should certainly be put in requisition. The diet, in these cases, should of course be very simple, bland and unirritating, but nutritious. A few spoonfuls of thick rice water, or of strong animal broth, free from fat, and without seasoning, or of essence of beef, may be given several times in the course of the day; but the less water the patient drinks, the better.

One thing I neglected to mention in its proper place; and that is, the practice of soldiers after a hot day's march, or in a southern climate, where the nights are almost always cool, to strip up their shirts, leaving the legs and abdomen bare, when they lie down for the night; nothing is more refreshing to the senses, and nothing more prejudicial to the health. I believe it to be the exciting cause of a great many of these cases of camp dysentery.

In spite, however of any system of treatment, some cases of camp dysentery will become chronic, and are then of most difficult management. Once fixed upon an unfortunate patient, the chances are fearfully against his recovery. A few have constitutions sufficiently vigorous to react and recover, after even years of suffering.

Within the last five years, I have been more successful, however, in the treatment of these cases, and will now endeavor to give, in as few words as possible, the means I have employed.

In the purely dysenteric cases, after the subsidence of the fever, the bloody and mucous discharges still continuing, Hope's mixture has seemed to meet the indications well, as a constitutional remedy. As a local means, enemata of persulphate of iron, ten grains, in half an ounce of thin arrowroot, repeated three or more times a day, have been followed by the best results. Sometimes a few drops of laudanum may be added—half a drachm or less.

Absolute rest in bed is very essential. Dry cups to the abdomen I use constantly; wet cups occasionally, when there is any tenderness to be discovered over the sigmoid flexure of the colon.

Massola, of the Sardinian army in the Crimea, found the use of ergotine in chronic dysentery, a very successful remedy. He gave ½ a grain hourly till the discharges were arrested. I have used this remedy since, in several cases, and have been pleased with the results. Sometimes, however, it has failed. I would recommend that it should be tried. In the chronic forms of the hepatic flux, it will perhaps be more useful than in the bloody and mucous fluxes.

Some three years ago, my friend Dr. Foster, of Cincinnati, mentioned to me, that he had seen surprising results in a case of chronic diarrhea, from the use of very small doses of Fowler's solution. I lost no time in testing its powers. The first case in which I employed it was, one of an old friend, a general officer in the army, who was the subject of a debilitating and harrassing diarrhea, contracted in Florida many years since. He kept it somewhat in check by the constant use of astringent and anodyne draughts. I gave him five drops of the solution a day, in divided doses, with the result of procuring an undisturbed night's sleep, for the first time in several months, and his complete recovery in a few weeks. I have since employed

it in several cases, and always with more benefit than any other remedy I have ever used.

The perchloride of iron has been extravagantly lauded in all mucous fluxes, in a recent work by Deleau. He makes a solution of the salt, which he terms his normal solution, and which is of the strength of 30° Reaumur. Of this he makes a mixture with simple syrup, of 1 part to 60, and the dose is a teaspoonful. I have used the officinal solution in doses of ten drops, in a teaspoonful of syrup or water, and with good effect. It is worthy of a trial.

I have brought these remedies forward, because I believe them to be new in army practice, because I have seen good results from them, and because I have no confidence, whatever, in the whole catalogue of the other astringents, mineral and vegetable, that have been heretofore relied upon in the treatment of chronic diarrhea.

Rest, dry cupping, and a bland but nutritious diet, with as little water drinking as possible; flannel worn habitually next the skin, well ventilated quarters, and protection from currents of air, are important adjuvants in the treatment of all the forms of chronic camp dysentery.—*Hand Book for the Military Surgeon.*

Surgery.

Amputations.

There are several questions relating to amputations, which need to be considered briefly, and in their proper order.

First.—*What conditions of the limb in army practice demand amputation?*

Simple fracture of a limb, it is uncecessary to say, does not demand amputation.

A fracture complicated with considerable laceration of the skin, or of the skin and muscular tissue, does not of necessity demand amputation.

A fracture, with laceration of the main arterial trunk supplying the limb, does not necessarily demand amputation. If the artery can be tied, the limb may be saved, and the fracture treated successfully.

A fracture, accompanied with the laceration of one or more of the principal nervous trunks, does not always demand amputation, yet it is a graver accident than the one last supposed.

A fracture, complicated with a destruction of both the principal arterial and nervous trunks, occurring in the course of a large limb, like the thigh, the leg, the arm, or the forearm, renders amputation necessary.

Similar lesions, without a fracture, render amputation almost equally imperative.

Comminuted fractures, accompanied with extensive lesions of the soft parts, or with a rupture of either the principal artery or the principal nerves, in the case of large limbs, generally demand amputation in army practice.

Compound fractures, with either of the above complications, in large limbs, generally demand amputation.

Compound fractures of the *femur*, without other complications, in army practice, *generally* demand amputation.

Fractures accompanied with extensive and violent contusion, demand amputation oftener than the same fractures accompanied with open laceration.

In army practice, gunshot wounds which penetrate the shoulder-joint, the elbow-joint, or the wrist-joint, demand either amputation or resection. (Guthrie says that an arm, will endure almost any amount of injury, without demanding amputation.)

Gunshot wounds penetrating the hip-joint are generally fatal, yet amputation may be practised under some very favorable circumstances. Resection also presents a feeble ground for hope.

Gunshot wounds of the knee or ankle-joint demand either amputation or resection. The knee more certainly than the ankle; and amputation is more often required than resection. Guthrie has seen no recovery from a gunshot wound of the knee-joint, unless the limb was amputated. Nearly all army surgeons confirm this experience.

Gunshot wounds, in which the ball does not actually enter the joint, but in which the bone is struck above or below, and the line of fracture extends into the joint, are subject to nearly the same rules as that class of cases in which the ball enters the joint; but the rule is less imperative.

Gunshot wounds penetrating the carpal bones do not generally exact amputation; but the same wounds penetrating the tarsal bones, generally render amputation necessary.

Gunshot wounds through or between the phalanges of the fingers or toes, or through the bones themselves, are often cured without amputation. Similar wounds of the fingers or toes do not in general result so favorably; but the rule in this latter case cannot be stated very positively.

Second.—*The point at which the amputation is to be made.*

This must depend mostly upon the part of the limb which has suffered injury; but in general we may say, at as low a point as will be safe; or in other words, we would state the rule to be, to *save as much of the limb as possible.* Yet in no case should the life be put at hazard for the sake of a limb, much less for a small portion of a limb.

There are two reasons why we adopt the rule above stated. *First*, because the longer the stump, the more useful it will be to the possessor; and *Second*, because experience has shown that the nearer an amputation is made to the trunk and the larger the circumference of the limb, the greater is the danger to life. Thus, according to Malgaigne, only one death occurred from twenty-six amputations of one of the smaller toes; seven deaths from forty-six amputations of the great toe; nine from thirty-eight partial amputations of the foot; one hundred and six from one hundred and ninety-two amputations of the leg, and one hundred and twenty-six from two hundred and one amputations of the thigh. Again, in the Crimea the mortality after amputations of the thigh, in a certain number of cases, was as follows: Lower third, fifty-six per cent.; middle third, sixty per cent.; upper third, eighty-six per cent.; hip, one hundred per cent. (twenty-three cases*). The same law of relative mortality was observed by the British Surgeons in amputations of the upper extremities.

After amputation of the forearm, seven per cent. died; of the upper arm, nineteen; and the shoulder-joint, thirty-five per cent.

The mortality after amputation of the femur through the upper third, is stated to be eighty-six per cent., but it is quite probable that it was much higher. McLeod says that he never saw himself any case recover in which the ampu-

* Stephen Smith, Surgeon to the Bellevue Hospital, and Professor of the Principles of Surgery, in a paper on hip-joint amputations, has brought together ninety-eight cases, of which fifty-six proved fatal; a ration of mortality of only fifty-seven and a half per cent. (*N. Y. Jour. Med.*, Sept. 1852.) In the Mexican campaign all amputations of the hip-joint terminated fatally.

tation was beyond doubt in the upper third. The French and Russians also found these amputations so hopeless that they almost abandoned them.

In certain instances, however, we find it convenient or necessary to deviate from the rule which we have established to "save as much of the limb as possible."

There is no reason to suppose that disarticulation, or amputations made through joints, are any more dangerous than amputations made by section of the bone; and on the field, time is of so much consequence, that we can well afford to sacrifice a small portion of a phalanx, by disarticulation at the nearest sound joint, rather than make the delay necessary for the application of the saw. Nor is it scarcely worth while to attempt to save a few of the carpal bones, when the disarticulation can be effected at the wrist-joint so much more speedily and neatly; indeed, if they were saved, they would, under any circumstances, add little or nothing to the value of the limb.

Other things being equal, we might prefer to amputate just below the elbow-joint, rather than through the joint, in order to save an inch or two of the radius and ulna; but the dangers to the patient are not, we think, precisely equal. It is safer to amputate through the joint, than at a point in such close proximity below, since by the latter method we expose the patient to the danger of inflammation extending from the wound upwards into the unopened, but more or less disturbed articulation. The same remarks apply to amputations made an inch or two below the head of the humerus. It will be better, generally, to disarticulate at the shoulder-joint. This latter operation was made in the Crimea, from the 1st of April to the end of the war, one hundred and two times, and it was followed by death in only twenty-five cases.

We would, upon the field or in civil practice, amputate toes only at the articulations; occasionally we may make an exception in favor of the first phalanx of the great toe, which can with advantage sometimes be divided through its middle portion.

In amputating at the foot we may remove all the metatarsal bones, according to the method recommended by Heys; or we may separate the tarsal bones between the calcaneum and astragalus on the one hand, and the cuboides and scaphoides on the other, as practised by Chopart; a portion only of the calcaneum may be saved, as in the operation of Pirogoff, or the complete disarticulation may be effected at the ankle-joint, as improved and recommended by Syme.

If, however, it becomes a question of amputation within one inch above the joint, or six or eight inches, we would unhesitatingly declare in favor of the latter, since the stump is not so likely to ulcerate, or to leave a tender cicatrix, exfoliation of the bone is not so apt to occur, and the power of the leg as a lever is not materially diminished. Indeed, we ought to say that upon the field we would prefer this point to disarticulation according to the method of Syme, since the latter exacts on the part of the operator the utmost care, and requires for his skilful performance, a good deal of time; besides this, experience has shown that Syme's operation does better when it is made for chronic disease of the foot, than when made for traumatic lesions. Pirogoff's modification of Syme's operation is liable to the same criticism.

We would not amputate within an inch of the knee-joint, for the same reason that has been given for preferring not to amputate just below the elbow-joint. It has been found to be extra-hazardous.

Amputation through the knee-joint is not objectionable, provided a small portion of the lower end of the femur is at the same time sawed off, as has been recommended by Mr. Syme. This affords a more even stump, and does not increase the danger. Baudens says that his experience in the Crimea enables him to affirm that disarticulation of the knee ought always to be preferred to amputation of the thigh. When this operation is made, the patella should be preserved, and great care should be taken that the flaps are

ample, so as to cover in completely the expanded surface of bone. Of eighty-six cases brought together, in the Nov. No. 1852, of the *N. Y. Jour. Med..*, by Prof. Stephen Smith, forty-nine resulted in recovery, and thirty-seven died, giving forty-three per cent. as the ratio of mortality.

Amputations ought to be made through the trochanters of the femur rather than through the hip-joint. We have seen that all of the cases of this latter operation, twenty-three in number, made by the British and French surgeons in the Crimea, proved fatal. Yet it is not certain but that it would be better in all cases of gunshot wounds occurring in the upper third of the thigh, to adopt it as a rule not to amputate; so little encouragement do the statistics of these amputations, made by army surgeons, afford.

Amputations made through the cancellous structures, near the ends of long bones, are less dangerous than those made through the shafts. This is explained by the fact that amputations through the tubular portions of the bone expose to diffuse inflammation and suppuration of the medullary canal and consequent pyemia.

Third.—*The method of amputation.*

Upon this point surgeons remain greatly divided. Velpeau, Guthrie, Vavernier, Sir Astley Cooper, Ben Bell, Charles Bell, Gibson of Philadelphia, Paul F. Eve of Tennessee, and many other distinguished surgeons at home and abroad prefer the circular method. In France this mode is generally practised.

Liston, Lizars, Fergusson, and Syme, who may be said to represent the Edinburgh school, prefer the flap method. In this country it is very generally adopted, especially by the younger class of surgeons.

Without entering into a discussion of the relative advantages of these two methods in *general* practice, or attempting to reconcile the conflicting opinions of the two parties, we shall content ourselves by affirming our belief that both methods have their special applications; and that, in gene-

ral, the choice may be safely left to the judgment of any intelligent surgeon.

In relation to their application to *military* practice, however, it seems necessary to make one or two special explanations.

In nearly all amputations made upon the field, where haste is demanded, the flap amputations have greatly the advantage. They can be made in much less time, and where time is a consideration of the greatest moment, they are greatly to be preferred.

If, however, time is of less importance, as it will be whenever the number of surgeons is properly proportioned to the number of the wounded, and the patient is to be transported immediately or soon after the operation a long distance, the preference ought to be given to the circular amputation, at least in the case of all larger limbs.

The heavy flaps attached to the end of the limb, disturbed by incessant motion, loosen and become gangrenous or ulcerate. This was the experience of the Crimean surgeons, where soldiers were transported long distances by land after amputation; and even when carried upon transports to Scutari, the same fact was observed.

Fourth.—*The period of time in which the amputation ought to be made.*

The "shock" is that condition of the nervous system which immediately ensues upon certain injuries in certain persons, characterized by coldness of the surface, pallor, tremors, a wild, anxious expression of the face, small, irregular and feeble pulse, sighing respiration, partial or complete paralysis of the bladder and sometimes of other organs, mental disquiet or apprehension, incoherent speech, etc.; which condition may continue a longer or shorter period, but usually, unless severe, disappears in a few hours. When the accident is of a more grave character; no reaction occurs, and the patient dies immediately or within a short time. In general it may be said, that if reaction does not

occur within twenty-four or at most forty-eight hours, the patient will die.

In some cases the occurrence of the shock seems to be delayed, the depressing influence of the injury not being felt until some little time after. Such, at least, is the opinion of Mr. McLeod, who affirms that he knows of several well authenticated cases which prove the correctness of this position. For ourselves, we confess that we have never met with these examples, except where some viscerial lesion or the rupture of a large blood-vessel has accompanied the accident. It is true that men often faint after a few minutes, or after removal, and when they have had time to contemplate their situation, who seemed undisturbed at first; and in other cases a severe and prolonged irritation from a spicula of bone has steadily aggravated the signs of depression and of shock; but we think those cannot with propriety be termed examples of delayed shock. We do not intend, however, to deny that the nervous agitations may be delayed in some cases, but only to express our conviction that the condition to which our attention has been called by these gentlemen is a rare phenomenon.

Surgeons who hold to the frequent occurrence of delayed shock, recognise in this an argument in favor of *immediate* amputation, in a great majority of cases; and certainly, assuming the premises to be correct, the argument seems not unsound. Says McLeod, "if this precious moment could be seized at all times, and that operation performed under chloroform, which assists so much in warding off the 'ebranlement' we fear, how much more successful would our results prove, than under other circumstances they can ever be."

The idea of immediate amputation did not, however, originate with those who maintain that the shock may be, and is, in fact, often delayed. Ambrose Paré urged that amputation should be made while the wounded were in sight of the battle-field; and Richard Wiseman, Sergeant Surgeon to Charles the Second, says, "if you decide to op-

erate, do so at once, while the soldier is in heat and in mettle."

Larrey, indeed, seemed to regard amputation as the proper remedy for this peculiar condition of the nervous system. "I have lost," said he, "a great number of soldiers, because, although operated upon within the first twenty-four hours, yet the operations had been made too late. * * * It is then demonstrated that the commotion, far from being a contra-indication to primitive amputation, ought to decide the surgeon in its favor. * * * The effects of the commotion, far from being aggravated, diminish and disappear insensibly after the operation."

Dubor, who served in America during the War of the Revolution, states, that "American surgeons amputated at once, and lost but few, but that the French delayed and lost many."

In regard to this question, it is our opinion, also, that amputations may be made in some cases immediately, or as soon as possible after the receipt of the injury; as, for example, when a limb is nearly torn off, and a dangerous hæmorrhage which cannot be arrested, is occurring; or when spiculæ of bone, such as neither the forceps nor fingers can extricate, are causing intense suffering. In all cases of injuries to small limbs, such as the fingers and toes, immediate amputation is proper; and in a considerable number of cases of injuries to larger limbs, when it is clearly seen that the patient is not faint, or depressed, or suffering under great nervous agitation. But we cannot accept of the doctrines of Paré, Wiseman, Larrey, McLeod, and others, without liberal qualifications, and a careful specification of the cases to which their rules are to be made applicable.

It may be that, as Hutcheson declares, the condition which we term shock, is not so frequently present as has been generally supposed, even after severe injuries; or that, as McLeod mantains, there is generally an interval, longer or shorter, between the receipt of the injury and the

accession of the nervous commotion. These points may be safely left open for future inquiry; but upon one thing we must insist, namely, that when the nervous agitation and depression are actually present in any considerable degree, amputation is generally a most dangerous resource. Amputation may then be necessary for the reasons which we have stated, and perhaps for other reasons which we have not noticed, but the necessity is greatly to be deprecated.

Our own experience has been, after at least twenty years of observation in hospital practice, including almost every variety of accidents and of amputations, that amputations of large limbs, made after severe injuries and before reaction has fairly been established, have resulted speedily in the death of the patients.

The cases in which the nervous commotion is "diminished" by an operation, with all deference to the opinion of the distinguished Larrey, we must explain to be those in which the broken bones, fragments of shell, splinters, clothing, or some other foreign substance lying in the track of the wound, are causing pain and perpetuating the irritation. Sometimes, perhaps, it may be the condition of the nerves themselves, or of the other tissues which have suffered laceration, and the clean removal of which by the knife may occasion relief; but such cases would be recognised by the presence of great pain, and extraordinary sensibility in the parts, which must lead us at once and naturally to regard amputation as the proper remedy.

In these opinions we think also we are sustained by the observation of a large majority of all practical surgeons, whether in or out of the army.

Our first duty, then, to many who have fallen upon the field and who cannot escape amputation; is to comfort and sustain them by words of encouragement, and by the administration of water, wine, brandy, or food; and having dressed the wounds temporarily, to wait patiently the

establishment of complete reaction before proceeding to the operation.

As to the value of some delay in certain cases, nothing could be more pertinent than the following communication, which the author has lately received in reply to certain inquiries from Usher Parsons, of Providence, R. I., surgeon in the United States Navy during the war of 1812. Portions of the letter do not relate especially to the subject of amputation; but it is all of sufficient interest to require of us no apology for its introduction, unabridged, at this place:

"DEAR SIR:—In the battle of Lake Erie, on the 10th of September, 1813, nearly a hundred were wounded; sixty-one of them on board the Lawrence, twenty-three on board the Niagara, and about a dozen in the smaller vessels. There were eleven cases of compound fracture, besides simple fracture, many gunshot wounds and extensive lacerations, and among them all, several amputations were required. Those wounded on board the Lawrence were ranged on the upper deck, in the spaces usually occupied by cannon and gun-carriages, which were removed from both sides of the deck, to afford room for mattresses. The only shelter over the wounded thus lodged, was an awning that served to screen them from the sun, and tarpaulins and canvas to spread over and shelter them when it rained.

"To the wounded of the Lawrence were added, after two days, those of the Niagara and of the other small vessels. The whole number of patients requiring a recumbent posture on the deck was about fifty. They remained in the ship fourteen days after the action, and were then landed at Erie, and lodged in a large unfinished court-house, and remained there until cured. Of this ninety-six wounded, only three died, and these were cases of so severe a nature that a surgical operation was not deemed justifiable, and they were left to linger out a few days of miserable existence. This entire success I have ever felt warranted in

ascribing to the purity of the air, more than to any other cause.

"Another cause of success worthy of special notice was, the delay of amputations and all severe surgical operations until the system was entirely recovered from the shock of the injury.

"Having sole charge of the wounded of the whole fleet, the other two medical officers being ill, and the wounded being passed down to me faster than I could attend to them in a proper manner, I aimed only to save life during the action, by tying arteries or applying tourniquets to prevent fatal hæmorrhage, and sometimes applying splints as a temporary support to shattered limbs, and in two or three instances small portions of flesh were divided which held a dangling limb to the great annoyance of the patient. In this state the patients remained until the following morning, under the free use of cordials and anodynes. At sunrise I commenced amputations, and in the course of the whole day and evening was able to finish all operations and dressings, and I believe do justice to each. On the following day I visited the other vessels, and brought all their wounded on board the Lawrence, and treated them in like manner. Now, as all but the three hopeless cases recovered, it was proved beyond a doubt, that the delay of amputations and other severe operations for one, and some even two days, had no unfavorable effect upon the chances of recovery, and probably some lives were saved by it, which would have been lost, had the operations taken place on the day of the injury. I am, however, advancing no new doctrine in this matter, but only adding new facts strikingly illustrative and confirmative of the correctness of those generally received at this day.

"A third cause of success in this action was, the plentiful supply of fresh provisions and vegetables, brought to the fleet from the shores of the Ohio, and of a generous supply of wine and cordials.

"Fourthly. There can be no doubt that cheerful and

buoyant spirits, occasioned by victory, contributed not a little to recovery.

"In two other actions I saw much to confirm the foregoing opinions. In an attack on Mackinac the following year by Col. Croghran's small army, transported thither in our vessels, the number wounded was less than that on Lake Erie. Our vessels were crowded and afforded no suitable lodgings for the patients—the air became foul—diet was salt meat and dry biscuit, with no fresh vegetables, and added to this, was the failure of our enterprise, we being repulsed. Consequently the wounds acted unkindly, and some died, that under favorable circumstances might have been saved.

"In a third action opposite Black Rock, near Buffalo, nearly a hundred of our sailors crossed the Niagara in a cold November night to take a battery by storm, preparatory to the crossing of General Smyth's army to take Upper Canada. The sailors succeeded with a loss of seven killed and about thirty wounded. The distance is about one mile across the river, and the wounded were much chilled in recrossing in open boats. The apartments for receiving them were very small and ill ventilated, but this was slightly remedied by a wood fire, which served to establish a current of fresh air from without. There were extensive suppurations, and some deaths of persons who, in favorable circumstances might have recovered.

"You inquire the result of my experience in amputation for *tetanus*. I think unfavorably of it. I have amputated twice without any benefit. The disease has extended to the spinal cord. Actual cautery over this with an iron brought to a white heat is reported to have saved life in some cases, but I have seen no case of a cure, by any treatment, of an established *tetanus*. For preventation of traumatic tetanus after a battle, I deem it of great importance to graduate the covering and clothing of the wounded, according to the temperature of the air. Hot days suc-

ceeded by cold nights are among the prominent causes of tetanus in armies and in ships of war.

"Yours very respectfully,

"USHER PARSONS."

Primary amputations, in the meaning of the term as now employed by most surgeons, are amputations made during the first twelve, twenty-four, or forty-eight hours, but not until after the severity of the shock has passed off, and more or less complete reaction has taken place in the general system. When writers speak of "primary" amputations, therefore, they intend generally to exclude from consideration "immediate" amputations.

Secondary amputations, as distinguished from primary, are those made, not immediately or soon after complete reaction has ensued, but after the inflammation consequent upon the injury has subsided, when perhaps suppuration has already commenced, or even at a later day.

The next question to be determined, then, is as to the relative safety of amputations made after reaction has ensued, and prior to the occurrence of inflammation, on the one hand, and amputations made after the inflammation has subsided, on the other hand.

In *civil* practice, secondary amputations are almost universally admitted to have been more successful than primary, the only real point at issue being, what has been the result of experience upon this point in *army* and *naval* practice; and we shall presently see that here surgeons differ pretty widely, but that at the present moment the great weight of authority preponderates upon the side of primary amputations. In fact, if we would look for advocates of secondary amputations in military practice, we shall have to seek for them mainly among army surgeons of the last, or in the early part of the present century. Faure, who was at the battle of Fontenoy, says, "Amputate after the subsidence of the first symptoms, and when suppuration is produced." John Hunter adopted the same views. Baron

Percy, in 1792, taught a similar doctrine; and in our own century, Blandin and Mann have arrayed themselves upon the same side: while Petit, Le Dran, Broomfield, Boucher, Guthrie, Hennen, Roux, Rush, Armand, and a host of others, have decided in favor of primary amputations.

Dr. John L. Stone, surgeon to the Bellevue Hospital, New York, in the November No. for 1849 of the *New York Journal of Medicine*, has given the most complete statistical record of the results of primary and secondary amputations which we have seen; and he sums up his conclusions, in part, as follows:

Primary amputations of the upper extremities are to be preferred both in military and civil practice, being more successful than secondary in both.

Primary amputations of the lower extremities are twice as successful as secondary in military practice.

There is another view of this important question which needs to be stated, and for the presentation of which, in a reliable and statistical form, we are also indebted to Dr. Stone. We refer to a comparison of the results of both primary and secondary amputations, with no amputations at all!

We believe that, after Bilquer, Malgaigne was the first to make the startling announcement that in the attempt to save the limbs, we run no greater risk than we do in amputating them; his opinions being founded upon his experience in the campaign of Poland, "where, in an army of 80,000 men, neither he nor his colleagues succeeded in saving a case after amputation of the lower extremities." and also upon certain results furnished by the statistics of the Parisian hospitals, where, during a period of three years, the mortality was seventy-five per cent.

It is well know that after the "Astor House Riot" in the city of New York, all of those whose limbs were amputated died. The amputations were primary. While, according to the statements published by Dr. George D. Gibb, of the wounded in the Parisian hospitals after the revolu-

tion of June, 1848, only six deaths occurred in compound fractures of the thigh out of the twelve cases in which an attempt was made to save the limb. These were all gun-shot wounds; but it must not be forgotten that so far as the management of the patients was concerned, subsequent to their injuries, they were in the conditions of civil practice.

M. Baudens, surgeon of Val de Grace, and late Army Surgeon in Algiers, and Drs. Walker and Pierson, of Massachusetts, have also done much towards arresting the indiscriminate sacrifice of limbs after complicated fractures. We are not, however, at present prepared to decide all the points in this delicate question, especially as applied to Army Surgery; and while we may hope that the facts brought together with so much care by Dr. Stone may save some limbs, and perhaps lives, by judicious treatment, and without resort to amputation, we may be permitted to express a hope, also, that it will not lead surgeons to indecision and fatal delays, especially upon the field. Certainly we are in no danger of adopting the extreme views of Bilquer and Malgaigne, by rejecting amputations altogether.

In army practice, just here is one of the great points of difference as compared with civil practice; in the former, patients have to be moved often, and to great distances, which render quiet to the limb, and many other hygienic attentions, actually impossible; yet it is upon these alone that the surgeon can rely to save mutilated members. Moreover, it is a matter of great importance for the safety of other patients crowded into the same wards, that suppuration and animal decomposition shall be prevented as far as this can be done. A military ward, filled with suppurating and sloughing wounds, would soon become untenantable by the generation of poisonous gases. In these circumstances, almost peculiar to military practice, we see some good reasons why primary amputations are likely to prove more successful, and why army surgeons have so generally conceded to them the preference.

If an attempt is made to save a limb badly lacerated and broken, certain conditions in the treatment are necessary to success.

All projecting pieces of bone which cannot be easily replaced and are not firmly attached to the soft parts, must be at once cut or sawn away.

All foreign substances, such as fragments of balls or other missiles, pieces of cloth, wadding, dirt, &c., must be removed.

Any portions of integument, fascia, or muscles, which are entangled in the wound, and prevent a thorough exploration, or may obstruct the free escape of blood or of matter, must be freely divided.

Counter-openings must be made at once, or at an early period after the formation of matter, to permit its easy escape.

The limb must be placed in an easy position, and not confined by tight bandages, or forcibly extended by apparatus.

Inflammation must be prevented or controlled by constitutional and local means, and especially by the use of water lotions whenever its employment is practicable.

If joints are implicated, they must be laid freely open, and placed at perfect rest, without adhesive straps, bandages, or other means of compression.—*Military Surgery.*

Obstetrics.

Treatment of Inflammatory Affections of the Female Breast.

BY W. H. BYFORD, M. D., OF CHICAGO.

After fully describing the character, of these affections, Professor Byford comes to their treatment. He arranges that for inflammation of the nipples under the heads of prophylactic, palliative and curative. The nipple must be prepared for its duties. The causes operating upon it produce abrasions, and their action is facilitated by the natural and acquired tenderness of the structures, particularly the epidermis and skin. Hence these must be hardened. The nipple should be covered lightly during pregnancy and nursing; the thinner and more permeable the covering the better. It should freely admit the air. At the same time the organ "*should be subjected pretty constantly to moderately rough friction.*"

An excellent dressing for the nipples for the last two months, is a rough, coarse sponge, so cut as to cover the areola; surround and cover loosely, but touch every part of the nipple. Over this there should be but one thickness of clothing, so as to allow of the evaporation of fluid as fast as secreted, and the free admission of air. In cold weather, of course, the parts should be covered more when going out. The nipples should be occasionally moistened with water, and allowed to dry slowly; friction with a dry towel or the fingers will assist.

During lactation the same rules should be observed, and after nursing, the nipple should be wiped clean and dry before being covered. A little glycerin or olive oil will prevent cracking. When inflammation comes on, pallia-

tives and curative measures are demanded. The healing process being continually interrupted by the performance of the functions of the organ, it is necessary to protect the part from the effect of these interruptions.

Artificial means are required, which intervene between the mouth of the child and the nipple. For this purpose the shield must be employed. This should be made in the form of a conical hat, having a rim, a crown cavity, with a draught tube rising out of the top for the passage of the milk. This rim should be large enough to cover the areola, the crown passing over the nipple, merely touching it on the sides. If the abrasions are on the summit of the nipple, the shield should be so deep that, when drawn, the top of the organ will not touch, or else it will cause pain. But if the cracks are on the side or base of the organ, then the cavity of the shield must be shallow, so that the top of the nipple touches its bottom in such a manner as to prevent any stretching, and to bring the pressure entirely on the top. In this latter case, the bottom of the cavity should be as smooth as possible, and correspond in shape to the summit of the nipple, in order to prevent unequal pressure. A soft linen rag, properly adjusted over the draught tube, is preferable to any other envelope.

M. Legroux mentions the following ingenious contrivance. He applies this mixture:—

℞.—Collodion, p. xxx;
Ol. Ricini, p. ss;
Ol. Terebinth, p. jss.

This is quite adhesive, and dries less quickly than collodion, on the areola with a brush, so as to encircle, but not touch, the nipple for the width of an inch. While yet soft the nipple is covered with gold-beater's skin which is pressed well down upon the mixture. Thus is formed a smooth and pliant covering. Holes are pricked through the skin with a needle, to allow of the passage of the milk. Before sucking, this must be moistened with sugar and milk.

The curative means for sore nipples are various. The

same will not do for abrasions as well as ulcerations. Nature is to be imitated by forming a cuticle for the part.

Abrasions may be covered with starch and mucilage. The following is a good mixture:—

℞.—Cerat. Alb. ʒ ij;
Ol. Amyg. Dulc. ʒ j;
Mel. Despum. ʒ ss. M.

Dissolve with gentle heat, and add Bals. Canad. ʒ ijss.

Apply each time of nursing. When the cracks are deep, close them by pressing their edges together, and covering with collodion in a thick and wide coat; this must be renewed when found necessary. When ulceration exists, it will be acute or chronic. Act as for this affection elsewhere; deplete, if acute, by leeches, and apply cold emollient poultices; or envelop the nipple in a thin layer of thick mucilage, covered by oil-silk, so as neatly to fit the organ, kept cold by ice applied in a bladder. When these remedies are not necessary, apply mucilaginous and bland ointment applications. Alum and tannin are good at first; sulphate of zinc and borax come next in respect to time. One scruple of tannin to one ounce of rose-water, five grains of alum, or sulphate of zinc are useful in the early stages, when the acute symptoms are subdued.

The following are useful:—

℞.—Sodæ Subborat. ʒ ss;
Glycerin, ʒ ij;
Aq. Rosa. f ʒ jss.
M. Use as a wash after sucking.

℞.—Sodæ Subborat. ʒ ij;
Cretæ Præp. ʒ j;
Spt. Vini,
Aq. Rosa. *aa* f ʒ iij.
Mix and dissolve.

The latter may be used when the ulcer is becoming indolent. In the chronic form strong astringents and stim-

ulants become necessary. A skilful use of the sulphate of copper and nitrate of silver will shorten the course of these ulcers. The latter applied solid to the surface, not oftener than once in eight days, is excellent. In the interval the sore may be dressed with tannin or alum in solution. When irritable, an ointment may be used, made of belladonna, hyoscyamus, or opium. One very good expedient, which will often entirely change the character of the ulcer, is to anæsthetize the part with ice, as practiced prior to operating.

When the lymphatic glands become affected, antiphlogistic measures must be employed; and when chronic, alteratives, tonics, liniments, etc., according to the peculiarties of the case. The treatment of milk abscess is of great importance. It should be prevented if possible, by proper management at the outset. When the nipple is deficient, or, from any cause, prehension is deemed impossible, it is decidedly improper to attempt nursing. In other cases, prolonged and judicious efforts should be made to render the organ useful. The first thing is to take perpendicular pressure off the top of the nipple, by some device to prevent the dress from forcing it in, and this, if possible, should be commenced early in pregnancy. For this purpose a shield should be employed, which will cause a pitting of the anterior surface of the breast, and a projection of the nipple. When called upon to treat a rudimentary nipple, after parturition, the effect must be more prompt. In many cases the organ may be made available by causing it to erect itself by simple titillation by the finger, and immediately applying the child; or by placing a thick layer of collodion, around it on the areola, which, drying, elevates the nipple. Then, by keeping the reservoirs empty, abscess is prevented. To aid in this we have various tubes and pumps, but all of which are objectionable. A puppy is often used, but it likewise is liable to irritate and excoriate the nipple. The only proper way is by the mouth of

an adult, varying the pressure or force, to suit the tenderness of the part.

A very useful class of measures are those to suppress the secretion, and thus relieve the distention, as opium in large doses, or applied as an ointment; but belladonna seems to have acquired most renown. Numerous instances are reported of its great value in such cases. Much depends upon its strength and application by inunction till the production of its characteristic effects upon the system. Cold, as a local remedy is beneficial. The temperature of the breast for this purpose should be kept steadily at about 40 or 45 degrees, as by water running through an india-rubber bag enveloping the organ, or the application of a bladder. No bad effects are to be apprehended from it. Internally, a saline cathartic may be given every other day, and two grains of iodide of potassium every four hours will materially assist.

Acute inflammation, the effect of congestion, is apt to be extensive, and will require energetic treatment. Warm fomentations may be applied for the first few hours with the hope of establishing the secretion of milk. A decided venesection will often turn the balance in favor of resolution. Immediately after this, the use of the veratrum viride may be commenced in doses of six drops every four hours, till the pulse is brought down below the normal standard, and then kept there. One grain of calomel with a quarter of a grain of sulphate of morphia, may be given, if the pain is urgent, say every four or six hours. A lotion of one part of sulphuric ether to two parts of alcohol will be a good soothing adjunct, after the inflammation becomes permanent. These measures should not be abandoned for warm poultices until suppuration is clearly evident, by which plan we may often limit the extent of this process. In this state of the gland, the most moderate means only should be employed to draw the breast. Retained milk is not the cause of inflammation here, as in milk abscess. If glandular inflammation is complicated with that

of the reservoirs, the treatment for both must be combined as local and general antiphlogistics with means to arrest the secretion and empty the reservoirs. Chronic inflammation will be cured by treatment similar to that for other glandular inflammations, as leeches, mercurials, iodine, and vegetable alteratives, internally and externally. Much reliance can be placed upon well-regulated and graduated pressure with adhesive straps, pressing the diseased part against the ribs; or with collodion thoroughly incasing the breast. When pus forms, evacuate it early, though where the abscess is deep, it is desirable to wait until the pressure from within has caused condensation of the overlying tissues, otherwise a large opening will be required. In milk abscess the earlier and smaller the opening the better. The effect of suppuration and evacuation of a milk reservoir is often to destroy its cavity, but in some cases a milk fistula is formed. This may be closed by an occasional application of the nitrate of silver.

Worse than these are the tortuous lacunæ, that sometimes result from the deep glandular abscess of the breast, and which are generally very difficult to cure. Injection of iodine is most to be relied upon. This may be done by inserting a soft, flexible catheter to the bottom of the canal and throwing the injection through it so as to apply it without dilution to the bottom of the fistula. This favors the shallowing instead of the narrowing of the cavity. Of course it is never advisable to slit up these obstinate puriferous ducts, because of the amount of tissue that might be damaged, which it is desirable to save.—*Chicago Med. Ex.*

Cancer of the Uterus.

BY M. ARAN, OF PARIS.

Deep-seated cancer of the uterus is situated in the cellular tissue of the fibres of that organ. In any form, it makes for itself a cavity by displacing the neighboring muscular fibres, which, with the mucous membrane, are generally healthy. Soon new deposits occur, and then these tissues become atrophied and disappear. The morbid matter softens, the tissues ulcerate, and the hardness and projections are replaced by irregular excavations with jagged edges, and bathed by a sanious fetid fluid.

Superficial or mucous cancer commences with hypertrophy of the papillæ and follicles of the mucous membrane; but we may have it either continuing thus as a *vegetating* cancer, or in other cases it may become of the *ulcerating variety.* It first appears most generally in the form of very fine mammillated projections, like shot or sand, which may be either hard or soft. The epithelium is not destroyed, and in some cases it forms foliated lamellæ separated by furrows. In others the epithelium may accumulate and form polypiform tumors. In this, especially, vascularity abounds, causing frequent and profuse hemorrhage which soon exhausts the patient.

The *ulcerated* form may be circumscribed or diffused. It is rarely primitive, most commonly following the other forms. Even in the vegetative form, when it appears to have an outward tendency, the cancer extends into the subjacent tissue by the multiplication of epithelial elements, and also determines the deposition of epithelial tumors in the subperitoneal cellular tissue, or in the uterine appendages, as well as in the vagina, bladder and rectum. When ulceration of the surface of the cancer has commenced, a similar process is set up in the more deeply-seated

and distant deposits, and fistulous communications are formed between the different organs.

These two forms of cancer do not possess the same amount of danger. The deep-seated is more grave, in infecting the system more rapidly and being less accessible to local remedies. The superficial may be advantageously treated by caustics. One case was thus cured five or six years ago, and is yet living. Death occurs less frequently than when other organs are affected; the most common causes are peritonitis inflammation of the psoæ muscles, or phlegmasia alba from obliteration of the veins. In some cases the uterus may be compressed by the tumor, and dilatation occur above the point of pressure; hydronephrosis or distension of the kidney by urine takes place, resulting in uræmic phenomena.—*Gaz. des Hôpitaux.*

On the Continuance of Ovulation During Pregnancy.

BY PROF. SCANZONI.

Prof. Scanzoni enters into some speculations concerning the continuance of ovulation during pregnancy. His opinions have been recently contested by Kussmaul. Scanzoni argues, that since the bursting of the Graafian vesicle and its consequences are entirely the result of the menstrual hyperæmia of the ovarium, and that the latter can differ greatly, the conclusion must be granted that the menstrual prolegomena are not always or necessarily connected with the bursting of the follicle which embraces a ripe ovum. He reasons ingeniously to prove that although he is unable to show fresh-bursts Graafian vesicles in pregnant women, yet there are strong grounds which render it more than probable that there persists a periodical ripening of ova during pregnancy, although without bursting of the follicle. But the reasoning is essentially speculative, and takes too little account of opposing facts.—*Brit. and For. Med.-Chir. Rev.*

Pathology and Treatment of Diseases of Menstruation.

BY ALFRED B. TUCKER, M. D., SAVANNAH, GA.

There is probably no class of diseases which so completely and continually baffle the skill of the physician as those named at the head of this article. The remedies used are those supposed to possess an influence over the uterus; and menstruation itself is looked upon as a physiological function of the womb, no *practical* attention being paid to the cause of the discharge, though physiol ogy has left no doubt as to the relation existing between the various parts of the procreative system.

Now, it is an acknowledged fact, that the *ovaries* are the organs mainly concerned in the function, the womb itself having no more influence on it than the bladder has upon the function of the kidney, though we would not be understood as asserting that the womb is like the bladder, merely an outlet for the secretion. The secretion takes place in the uterus; but, as I say, in another place, it is merely the result of a reflex act, originating in the ovaries. At each recurrence of the twenty-eighth day, an ovum matures and bursts, and synchronous with this the menstrual flow takes place. It is purely a reflex act; why it should follow the maturation of the ovum, of course we cannot tell any more than we can account for the effusion of the bile or pancreatic juices upon the presence of chyme in the intestines. But it is nevertheless true; and before puberty, at which time the maturation of the ova first takes place, menstruation does not occur: and after this maturation ceases to be effected, menstruation ceases.

Again: this bursting of the ova does not take place during either pregnancy or lactation, as a general rule, nor does menstruation occur during the same periods.

If abortion should occur, it does so at a regular recur-

rence of the menstrual period, unless such miscarriage should be the result of traumatic causes. And labor, unless brought on by the last mentioned causes, occurs at the end of 280 days, which is a multiple of 28, the regular period of menstrual return.

Again: menstruation, abortion and regular labor, are accompanied by severe pain in the back, near the seat of the ovaries, and I think, it could be reasonably shown to be ovarian pain; but my limits will not permit me to enter upon a proof of this.

If the above premises are correct, I think there is little difficulty in reducing the diseases to a rational plan of treatment. And I claim that the true seat of disease in menstrual difficulties is to be found *in the ovaries*, and they should be the object of attack in our treatment.

Now we have the disease of menstruation of three kinds, amenorrhœa dysmsnorrhœa, and menorrhagia, and leaving out of view those caused by malformation, and requiring surgical interference, we shall treat them all as a class, merely looking upon the various conditions of the ovaries in there pathology as causing these various diseases, according to circumstances and laws which we cannot comprehend. Nor is this assumption surprising or untenable, when we remember that opposite conditions produce the same effects, in other organs, that anæmia and plethora both produce delirium, and that both produce, sometimes, coma, and sometimes insanity, according to circumstances that we cannot comprehend.

We recognize, then, two conditions of the ovaries as giving rise to menstrual disease, congestion and anæmia, sthenic and asthenic causes. And just in proportion as these conditions obtain, we have one or the other of the diseases of menstruation. For example, a woman during the period of menstruation gets her feet wet, and the discharge suddenly ceases; she has fever, a full, strong pulse, and hot skin, all evidencing congestion somewhere, and which, from the history of the case, we readily place in the

ovaries. Congestion or hyperæmia thus produces suppressed menstruation: or the attack may not proceed so far, and with the generation of great pain, you have dysmenorrhœa developed in future attacks. Now, a plethoric female, in whom we see the evidences of hyperæmia, has menorrhagia; so that too much blood in the ovaries may produce any of the three disorders of menstruation.

It is equally true of anæmic causes. The chlorotic girl has anæmia and amenorrhœa; or she may have dysmenorrhea; and it is frequently the case that profuse menstruation may be traced to an anæmic condition of the system.

Now, these opposite conditions, in producing these diseases, are merely analogous to diseases produced in other organs. A certain amount of blood is necessary to stimulate the nervous system to action; if there is too much, it seems to clog, as it were the action, if too little, it does not stimulate enough. Whatever may be the true explanation, the fact is undeniable.

We reduce, then, the diseases of menstruation to these two classes of causes—anæmic and hyperæmic. Another fact, frequently mentioned, and bearing directly upon this subject, I shall barely notice; it is the analogy between the *ovaries of the female and the testicles of the male.*

The treatment which I would propose, is easily deduced from the pathological view given. It is merely on general principles, relieving congestion by the means ordinarily recommended, and overcoming anæmia by the drugs commonly used.

There is, however, at least one remedy, which seems to have a direct action upon the ovaries, and which I have used in a few cases in the last six months; it is *lupulin.* Now, this remedy has a good effect in the male, when used for nocturnal emissions; it was recommended for this purpose, several years ago, by Dr. Wm. Byrd Page, of Philadelphia, in whose hands it had proved a potent remedy. Acting upon this fact, I used the remedy in hopes it would quiet the ovaries as effectually as it did the testes. We would not be un-

derstood as saying that the same kind of excitement exists in both sexes. The bestial passion in the one, has, we rejoice to believe, no place in the purer minded sex, but is merely a disease, beyond the power of her mind or thoughts. I found the effect was the same, and have never found any remedy control the diseases of menstruation more effectually than this.

The principles on which this was determined, would point to cantharides as being useful, in cases of anæmia, amenorrhœa, or menorrhagia. I have, however, no experience with this remedy, though I believe it would be found efficacious.

One practical result is worth a hundred theories, and I will give two or three cases; in which I have followed the thoughts here suggested.

Case 1. During the past summer, a young lady applied to me with menorrhagia; she said she had never been regular, menstruating every fourteen days for seven days, thus being free from the discharge but fourteen days in the twenty-eight. It was this case which first started me in the train mentioned in this article. I determined to try lupulin and gave the following pills:

℞.—Vallet's Carb. Iron, } *aa.* grs. iij.
Lupulin, }
Sig. One three times daily.

The second dose stopped the discharge, a result that could not be attributed to the iron and must have been due to the lupulin. The prescription was continued, with the addition merely of a grain of rhubarb, to obviate the constipation produced by the lupulin.

At the recurrence of the fourteenth day, she was affected with all of the symptoms of menstruation, except discharge, pain in the loins, being, as usual, a prominent symptom. An injection of starch and laudnam was used, which quieted the symptoms, and the period passed without any discharge.

Fourteen days thereafter, being 28 days from the com-

mencement of the treatment, the medicine was discontinued (to enable nature to accomplish the routine) for six days and again commenced. As the result of treatment, she is now perfectly well, and has never had any recurrence of the disease.

Case 2. A negro woman, of this city, miscarried four weeks ago, and is now suffering from profuse menstruation, with violent pains in the back, about the lumbar region. Ordered—

℞.—Lupulin, ʒi.
Biv. in Pulv., iv.
One every 3 hours.

The next morning her pains were relieved, and she was better; but later in the day, owing to the cessation of the medicine, the pains returned, with more profuse discharge.

℞.—Lupulin, ʒi.
Sugar of Lead, grs. v. make iv powders.
One every three hours.

I confess I gave the sugar of lead with no confidence in its powers, but rather in deference to the prescribed ideas of the profession. The medicine relieved the pain, checked the discharge, and in four days she was well.

Having offered these suggestions to a professional friend in this city, he offered to give it a trial in a case of dysmenorrhœa, then under his charge. The directions were not carried out by the patient, the medicine not being persisted in long enough; but even with this drawback, I learn the pain was very materially lessened at the next period. This case was the result of wet feet, during the flow of the menses.

In a case of threatened abortion, in which the pains were decided, and especially lumbar or ovarian, I used lupulin giving 10 grains. The pains immediately ceased, and the miscarriage was prevented.

I have thus barely alluded to this subject, and have left many links in the chain to be filled up by the profession.

I commend the subject to them as worthy their attention, and if I shall be in any way instrumental in relieving the sufferings of those who are the better part of our race, I am amply repaid for my labor.—*Savannah Jour. of Med.*

Therapeutics.

Thermo-Therapeia, or the Heat Cure.

BY MR. ERASMUS WILSON.

For a knowledge of thermo-therapeia, medical science is indebted to Mr. Urquhart. Thermo-therapeia is the application of atmospheric air at a high temperature to the surface of the body for the relief of pain and disease. The poets used the expression "bathed in light;" if we adopt the same language in reference to air, we may style the process a bathing in hot air, or a hot air bath; but in no other sense does the term "bath" apply to its use. I will endeavor to trace my own experience on my first introduction to the thermæ, now some time back. It was the winter time, the season bitterly cold, my inception as a "companion of the bath" took place in the private thermæ of my esteemed friend Mr. George Witt, of Prince's Terrace Hyde Park. As an example of simplicity of construction, Mr. Witt's thermæ may be usefully taken as an illustration. He had at the back of his house a room, twenty feet long, by ten feet in breadth, and twelve feet high, with a window looking out upon a lead-flat, such as is common in London houses. To convert this room into a thermæ, he divided

it into two compartments by means of a wall which crossed it about one-third from its further end. He had thus two apartments, an outer one, the cooling room or *frigidarium* of the Roman thermæ; and an inner one entered by two small doors (inner and outer) in the partition wall, the *caldarium*, *calidarium* or *sudatorium*. Having left my garments in a portion of the outer apartment which served as a *vestiarium*, and girt about the loins with a *cummerbund*, the kilt of oriental nations, I entered the calidarium; the temperature was delicious, such a contrast with the exterior world! The wind and snow were raging without, while here was a paradise of 135 degrees of Fahrenheit. Within this hallowed nook anxiety and care and fatigue, like the burden of Bunyan's Christian, seemed to fall from my shoulders; I stretched forth my limbs in peace and enjoyment; the brain seemed to think more lightly and pleasantly, and my ideas flowed brightly and calmly.

My friend, Mr. Witt, in the course of a few minutes, was streaming with perspiration, which ran down his face in rills and dripped from his elbows and finger ends in continuous drops, while my skin was as yet dry. I was struck also with the rich and healthy complexion of his skin; it took its hues from the free circulation of the pure arterial stream through the capillary plexus of the derma; as he drew his fingers forcibly across his chest, the white traces left by their pressure were instantly replaced by the glowing vermilion of the arterial blood. There were no gorged capillaries in that skin; no venous transformation in that cutaneous plexus; no deposits of unhealthy coloring matter either in the cuticle or in the tissues beneath; no pallor, no excess and no deficiency of fat; no choked pores; no wrinkles from loss of elasticity and contractility of the fibrous and muscular structures of the corium; no abnormal or deficient sensibility of the nerves—all was as nature made it, perfect and beautiful. I looked for the first time in my life on a really healthy skin. How very curious and striking was the difference between my friend's skin and

that of every one present; one gentleman, a finely built, handsome man, with a remarkably capacious chest, had too great a preponderance of adipose tissue, while the hue of the skin in an oblique light was a bright golden yellow. In another, the muddy tinge of the skin discovered the impure and muddy condition of the blood. The habitual use of the thermæ removes these discolorations, these indications of imperfect elimination by drainage through the perspiratory system, and while it gives beauty to the skin, bestows health on the entire economy. After a free perspiration of half an hour's duration, I was anointed with soap and had a rub down with a wisp of white fibre called *lyf*, the fibre of one of the palm trees commonly used in the East for the purpose to which it was now being applied. To the friction with soap succeeded a shower of warm water, then a douche of cold water, after which I was made to sit still for some minutes until the warmth of the skin was restored.

From the calidarium I passed therefore to the frigidarium, and on this occasion, midwinter and a piercingly cold snowy day, truly deserving its name. I was then *cloaked* in a sheet taken from one of the pigeon holes of the *columbarium* standing in the corner of the room, my *cummerbund* was allowed to drop on the floor, and I was made to recline upon a cane couch immediately under the open window. How cool and pleasant were the puffs of wind that played over my face and limbs—how different their impression on my skin to what they had been an hour before! I needed not the assurance of my friend that there was no fear of catarrh or bronchitis; my own feelings told me that I could resist any amount of cold, and I was obliged to suppress a longing to walk out upon the leads with no other covering than my sheet into the midst of the sleet and wind; had the lead flat been a terrace or a lawn, I could not have resisted the temptation. After awhile I exchanged the horizontal position on the couch by the open window, to a sitting posture; the sheet was thrown off from my back and

limbs; the moisture of the surface was dried up, no wiping excepting of the head and face was practised or required; the skin felt smooth and warm, and I was permitted to dress, but with the injunction that I was to dress leisurely lest the perspiration which had ceased, should again be excited. It is worthy of notice that great attention is paid to the temperature of the skin during the curriculum of the thermæ; after the cold douche, we return to the calidarium to recover any waste of heat; and in the after cooling of the body in the frigidarium, the whole of the moisture must be dried off the skin, and perspiration must be wholly suppressed, as indicated by a peculiar smoothness and polish of the surface, before we are qualified to resume our dress. All clamminess of the skin must have ceased entirely before we resort again to our usual coverings.

Among my fellow subjects for the thermæ, I have seen numerous examples of relief from painful affections dependent on morbid composition of the blood. Several were cured of gout, of rheumatism, of neuralgia. A clergyman and doctor of divinity, who resorted to the thermæ to reduce redundancy of adipose accumulation, suffered habitually during the winter season from catarrh, bronchitis, and neuralgia, and was often laid up for weeks together with these affections. Since he has adopted the use of the thermæ, which he enjoys excessively, he has diminished in bulk, he has lost all proneness to catarrh and bronchitis, and no longer experiences the pangs of neuralgia. Recently I was much interested in seeing a case of eczema of the face treated throughout by the thermal process alone; the patient lived in the thermæ for several days, he used very high temperatures, and he succeeded completely in curing his disease. It was curious, he remarked, to observe the patches of eruption; they yielded no perspiration and looked like so many parched up islets in the midst of the surrounding copiously perspiring skin. At about the same time a medical friend consulted me for prurigo senilis. "You know Mr. Witt; go and ask him to admit you to his thermæ,"

was my counsel. The next time I paid a visit to my friend's thermæ, there was my elderly patient luxuriating in the fullness of enjoyment. That day he left his prurigo senilis behind him in the calidarium, and I believe has had no reminder of it since. He went back to his home on the coast, and now offers a seat in his own thermæ to his curious or suffering friends.

I have hinted at the curative effects of very high temperatures; and both Mr. Urquhart and Mr. Rolland have mentioned to me important results from this process. It occurred to Mr. Urquhart's mind that as fever heat was represented by 112°, he should be able, could he create a temperature higher than fever heat, to supersede the stage of fever at once. Thus, taking the beginning of the cold stage, which nature seemed to struggle painfully to overcome, he was enabled by a high thermal temperature to cut it short at once and to pass over it and the hot stage to that which nature seemed desirous of reaching, namely, the sweating stage. He believes that at a certain temperature he can put a stop to the fermentative process of zymotic diseases; and at a higher temperature still, destroy animal poisons. He suggests, moreover, a curious and important inquiry, namely, the influence on the chemical composition of the blood circulating through the capillary plexuses of the skin, of hot air having a temperature of 160° of Fahrenheit. Not so much its influence on the healthy blood as on the blood of persons in a state of disease.

A member of Mr. Urquhart's family, a child, was accidentally burnt; the burn was distressingly painful; various applications had been made, without relief; the child was accustomed to the thermæ, and desired to go into it; it was carried into the thermal chamber, and the pain of the burn was immediately assuaged. Mr. Urquhart himself received a severe scald; he betook himself to the thermæ; there in a heated atmosphere he directed upon the injured part a blast of air hotter than the temperature of the apartment; the pain became lessened, the process of effusion, which

results in the production of a blister, was arrested; to use a popular expression, "the heat had drawn out the heat."

Looking at the thermæ in a social and political point of view, we find that it is wonderfully adapted for the preservation in health of large bodies of men, combining in itself the respective advantages of air, exercise, and ablution. Adopted by our own army, there cannot be a doubt that it would very considerably reduce the rate of sickness and death, and add to the efficiency of the men. It is applicable, also, in all cases where numbers of persons are collected together, as in barracks, prisons, poor-houses, factories, and schools; in large business establishments, where a considerable number of young men or young women are assembled; or in places of temporary meeting, as the House of Commons and clubs. It must always be borne in mind that the thermæ not only offers advantages as respects physical health, but it also conduces to moral vigor. But the usefulness of the thermæ has even a wider sphere; the Londoner, or the inhabitant of a large city, would live as healthy immured within his city walls as the rustic amid the fields and meadows of the country. His thermæ would be to him in the place of a country house, of a horse; it would give him air, exercise, freshness, health, and life.

I might add very materially to the long list of conditions to which the thermæ might be applied with advantage, but I limit myself to a single one more; it is that of extensive works, employing a large number of men, either in operations in themselves unsalutary, or in unhealthy localities. The importance of preserving a body of working men in a state of health, and in the best condition for the performance of their duties, must strike every one, and is an object worthy a moderate sacrifice on the part of proprietors or owners. There are many localities in which miasmatic fevers abound, and constantly incapacitate the working force of large operative establishments. I believe that a few pounds expended in thermæ would correct this evil; would put the men into condition to resist the miasmatic

force, and to eject the poisonous elements from the blood when they had already found admission into the organism. *Dublin Medical Press.*

Blood-Letting as a Therapeutic Agent.

BY J. B. MURFREE, M. D., MURFREESBORO', TENN.

[Read before the Rutherford County Medical Society.]

MR. PRESIDENT:—At the last meeting of the Rutherford County Medical Society, I was appointed to prepare an article upon blood-letting, to be read at the present meeting, and in discharge of that duty I here present to the Society the views of the subject, as it presents itself to my mind, not unconscious of the many imperfections which encumber this dissertation. Had I the ability to bring before the Society this subject in its proper light, and to set before them, in a graphic manner, all its bearings and attendants, the short time in which I am compelled to prepare this article, would not suffice to enable me to lay the subject entirely and clearly before them, for their consideration. But I shall endeavor to present this subject to the Society in a few words, and in a concise manner, and to set forth such views as seem to be the true ones, not attempting or claiming any originality in the views presented.

When and how blood-letting, as a curative agent, originated, would be an interesting inquiry, but one that is surrounded by difficulty and obscurity, the correct solution of which would probably be impossible. But it is satisfactory to know that the inquiry is interesting, more from the curiosity that would be gratified than the usefulness that would be gained by a correct solution of the problem.

Blood-letting was probably among the first remedies made use of by the followers of the healing art, to overcome disease. As far back as we are able directly to trace medicine as a science, we find that blood-letting was in use. Hippocrates, who was among the first writers on medicine, and who lived more than two thousand years ago, was acquainted with the principal modes of blood-letting, as they are practised at the present day. In his writings he at different places recommends the abstraction of blood, both locally and generally. Galen was well acquainted with blood-letting, and was one of the first to dispel that erroneous doctrine of the ancients, that arteries contained air. The ancients held the belief that the air drawn into the lungs by inspiration, was carried to the heart by the pulmonary veins, and from this distributed by the arteries throughout the whole system. Galen was the first to combat this idea, and by cutting an artery and seeing the blood flowing from it, he proved conclusively that arteries contained blood and not air. But still Galen's idea of the circulation was very crude and imperfect; and until the time of the immortal Harvey, the ideas and theories of the circulation were very imperfect and false, and would in the present state of science be considered utterly ridiculous.

Blood-letting has ranked high in the catalogue of remedial agents in every age, and scarcely has any remedy passed through so many wars and yet vascillated so little as this has. After the trial of hundreds of years as a therapeutic agent, of great power and so potent for good, it is still held up to the medical world as an agent powerful in overcoming disease. There has been a great revolution in the minds of the medical world in regard to this powerful remedial agent. Not a great many years ago bleeding was resorted to in the the treatment of almost every disease, no matter what was the nature of it, and the amount of blood that was occasionally drawn is almost fabulous. The celebrated Dr. Dewees was bled to the amount of 90 ʒ at one

time. He drew 120 ʒ, within five or six hours, from a woman seized with convulsions at the commencement of labor. There is a case recorded where a patient was bled to the amount of nearly 2½ gallons within a few days. But such a general resort to blood-letting, and the extent to which it was carried a number of years ago, has justly fallen into disrepute. Now the opinions of medical men are very much changed, and instead of carrying blood-letting to the extent that it once was, there seemes to be an inclination on the part of some to carry it to the other extreme. In this country, as well as in Europe, may be found men of distinction, who are very much opposed to the use of the lancet, except to a very limited extent. And some even go so far as to discard it entirely from their practice. We may very reasonably, to a certain extent, account for this change, and I would not condemn those bold practitioners of former times as utterly ignorant of the use of the lancet, though they did sometimes bleed too much, and bled patients who would have been better off had they been put on the use of tonics. It seems probable to suppose that there has been, to some extent, a modification in the type of diseases ; and the change that has been produced in the constitution of individuals by the manner of living at the present day, would, to a certain degree, contra-indicate bleeding to such an extent as was formerly practised.

Blood-letting is a powerful remedial agent, and one that is capable of producing mischievous results when indiscreetly and indiscriminately used. And that it has often been carried too far, and used to the great detriment of the patient, cannot be denied. Alas, this has too often been the case. But this is, in reality, no argument against the judicious use of the remedy. Shall a remedy be discarded because it has been indiscriminately used by the injudicious and ignorant, and has, when thus used, been productive of much harm. If this be the case, down go all of our most valuable remedies, and our treatment, by which we have been able to overcome many diseases, and to hold

others at bay, degenerates into a mere expectant plan of treatment. The intelligent portion of the medical world will all, I think, condemn the indiscriminate use of blood-letting; and so will they condemn the indiscriminate use of any medicinal remedy. But that it admits of proof that bleeding, when used judiciously, and under proper circumstances, is productive of the happiest results, and in certain cases is almost indispensable.

The effects of blood-letting upon the system are those of a powerful sedative. It lessens the action of the heart and arteries, diminishes the amount and momentum of the circulating fluid, reduces the fullness and frequency of the pulse, lessens the number of respiratory movements, reduces the heat of the surface, diminishes plethora, produces a change in the quality of the blood, reducing its elasticity, thereby tending to prevent exudations; diminishes secretions, increases absorption, relieves congestion, and tends to promote the action of other remedies. Such are the generally observed and admitted effects of blood-letting, as ordinarily met with. But should the loss of blood be carried to a further extent, we have syncope supervening as a result of the loss of blood. Then there is a cessation of the heart's action, and the absence of other observable vital functions. Sometimes this state of syncope is attended with convulsive phenomena, and where the loss of blood has been very great it may end in death. But most generally reaction very readily takes place, and if properly guarded, is moderate enough. These being the effects of bleeding, it is obvious that there are many conditions in the course of diseases which it is calculated to overcome and to modify. And the questions,—when to bleed, and whom to bleed,—are the questions of practical importance to us.

The indications for the use of a remedy are numerous and various, and there is no particular symptom upon which we can rely as an infallible guide to the use of the lancet; but it is rather a combination of symptoms and conditions by which we are to be guided. The general indica-

tions for blood-letting, and the conditions which indicate the propriety of its use, are a full habit, a strong, full, and quick pulse, hot skin, flushed face, and inflammatory action going on in the system, and tending to disorganization. These symptoms occurring in a stout and previously healthy patient, free from all morbid taints of the system, either hereditary or acquired, call loudly for the use of the lancet and the practitioner can scarcely err if he bleeds under these circumstances, and he may greatly endanger the life of the patient if he neglects the timely use of this remedy.

But there are some cases which do not present these symptoms, yet still demand the use of the lancet. Sometimes inflammation attacks some interior organ, and instead of having such symptoms as usually indicate the use of the lancet, there is a small pulse, cool skin, and apparent prostration, and it is of the utmost importance that we be not deceived by this condition, and that we properly discriminate between this appearance of debility, and that of real debility. And this we may do by knowing that it has occurred in the commencement of the disease, and by a close scrutiny of all the symptoms presented. On the other hand bleeding would not, as a general rule, be admissible where there is an anemic condition, and a depressed state of the vital powers, a depraved condition of the blood, or where there is nervous irritation arising from direct depression of the nervous centres such as would be indicated by a small and feeble pulse, coolness of the skin, and paleness of the face. The ends which we may accomplish by blood-letting, are to lessen the amount of blood when it is too great, and to reduce its quality when it is abnormally rich or stimulant, and by so doing to relieve irritation and inflammation; and by lessening the heart's action to obviate local determinations, to relax spasms, and to relieve irritation by depressing the nervous centres; to arouse susceptibility in any organ rendered insensible by congestion of the nervous centres, and to promote absorption. Such are said to be the indications which bleeding is

calculated to fulfill. Congestion is a condition, that by the judicious use of the lancet, we may frequently relieve to a great extent; and by the assistance of other remedies, succeed in entirely removing. That congestion often exists where it would be imprudent to use the lancet, can not be denied; but when the remedy is admissible, we would expect good results, from the nature of congestion. To say of what congestion essentially consists, and to define the limits between it and inflammation, would be quite a difficult undertaking, as there exists great difference of opinion among pathologists on this subject. But I think we may safely say that congestion is an unnatural flow of blood to a part,—more blood being sent there than in health, and this overplus of blood becomes stagnated to a certain extent. Congestion is preceded by irritation, and its tendency is, if unchecked, to inflammation. In congestion there is an inequality of the circulating fluid; in one part there is more blood than exists in health; in other parts there is less. Now the effects of blood-letting are to reduce the quantity of blood in circulation, to lessen the heart's action, and its tendency is to equalize the circulation; and if we equalize the circulation we relieve the congestion. And by bleeding in congestion, the supervention of inflammation is prevented. In some of the active hemorrhages with which we meet, blood-letting is one of the best remedies, and by a full bleeding when a hemorrhage is threatened, we may often succeed in preventing its occurrence. Fevers do not demand the use of the lancet to control their own action; but when it is of a symptomatic character, and dependant upon a local inflammation, or when the febrile action is high, and there is a determination to some important organ, we may derive much benefit from blood-letting.

But it is to inflammation that blood-letting is peculiarly adapted, and in which, when properly practiced, it is productive of the happiest results. Still there are a great many cases of inflammation in which blood-letting would

not be beneficial, nay, would positively be injurious. As an antiphlogistic, where the grade of the inflammation and the attending conditions are such as to admit of its application, blood-letting has no rival. It rises superior to all other remedies, and holds a supreme sway. In inflammation we have an increased quantity of blood sent to the affected part, which serves to keep up and increase the already existing irritation. The blood itself is changed, possessing stimulant properties in a higher degree than in health. The momentum of the circulation is increased, nervous irritation exists beyond a natural limit, and the effects of blood-letting are such as to ameliorate and to remove these morbid conditions.

In claiming so much for blood-letting as an antiphlogistic remedy, I do not wish to depreciate, in the mind of any one, the value of other remedies, which justly rank high in the treatment of inflammation.

There are other remedies which exercise a controlling influence over inflammatory action, and which deserve great confidence. But I think they are secondary to the lancet, and form very valuable auxiliaries, and their actions are greatly promoted when preceded by bleeding. By the timely use of the lancet inflammation is often cut short, and prevented from establishing itself, with all of its attending evils. The limits to which this article is confined will not allow of my specifying the many and various diseases to which the remedy is suited, and in which it might with benefit be resorted to, for a volume might readily be written upon this subject, and there is scarcely any disease in which it could be entirely proscribed. Without a doubt the lancet has its sins to answer for as well as every potent remedy, and the too frequent and indiscriminate use of it should be condemned by all. The evils of blood-letting have been spoken of and dwelt upon by many writers, and they certainly merit our closest investigation. The principal evil that bleeding is productive of, is that of prostration and debility. And in the use of the remedy we should

cautiously guard against such evils; for it may chance that we have overcome the disease, but placed our patient in such a condition that he will die from exhaustion. And when we have reasons to believe that a patient has not sufficient constitutional vigor to bear the depressing effects of the remedy, we had better omit its use.

But I think that debility is sometimes brought about, or at least increased by a neglect of the early use of the lancet. For where there is an inflammatory action of a high character, and it is not controlled, when it has subsided the powers of life are weakened to a greater extent than they would have been had the excitement been kept down by bleeding, for the depression is in proportion to the previous excitement.

I have thus endeavored to set this subject before the Society in its proper light, and have also endeavored to avoid the inculcation of any dogma or false doctrine. I believe the lancet, when properly used, is one of our greatest aids in overcoming many diseases, and in some it is almost indispensable; and as yet we have no substitute for it, and its discardure would be a great loss to the profession. The re-action from the extreme to which blood-letting was formerly carried, has prejudiced the profession against the remedy too much, and the hue and cry that is raised against it seems to me to be uncalled for, and to depreciate a good remedy too much. I am not in favor of bleeding unless there is a necessary call for it, and when indicated I do not think we ought to refrain from the use of it from fear of mere anticipated debility. I believe it may be necessary sometimes for us to approach the bedside of our patients with the lancet in one hand, and the cup of stimulation in the other. Stimulants form an important part of the treatment of disease, and an early resort to them is often neglected to the injury of the patient, and I do not wish to depreciate their value in the least.

I have endeavored to bring before the Society this subject in such a manner as to elicit from the members their

views and opinions, and not to intrude upon the society any idea that might be peculiar to myself. Hoping that I have discharged my duty, and have furnished material for discussion, I close this essay, regretting that time has not been sufficient to enable me to present this subject in such a manner as it should be done.—*Jour. of Med. and Surg.*

On the Resorption of Pleuritic Exudations.

BY PROF. SKODA.

The resorption of pleuritic exudations frequently takes place very slowly, because the capillary vessels in the subplural connective tissue are obliterated. This may be the result of shrivelling and disappearance of the connective tissue newly formed from the exudation, as then, in consequence of the arrest of the metamorphosis of tissue between the blood and the exudation, endosmose and exosmose cannot duly take place. It is not until after the lapse of months or years, when the fluid portion of the exudation has penetrated through the false membranes investing the pleura, that its resoption occurs. In the first case, internal medicines can, of course, avail nothing, as in them we possess no means of exciting the reformation of vessels. What has been said explains the action of iodine injected in exudations, inasmuch as, by exciting inflammation, it causes the development of new vessels, and so induces the resorption of the effusion. But this view does not, perhaps, encourage us to the frequent employment of thoracentesis and subsequent injection of iodine; for this proceeding is by no means so safe as the corresponding operation for hydrocele. But, apart from that consideration, the injection of iodine or nitrate of silver into the pleural sac can answer no useful purpose; as, on the one hand, in consequence of the presence of the albuminous exudation, the

caustic influence of these agents cannot reach the pleural sac, particularly as by the chemical combination which these substances form with the effusion, their power is altered and exhausted, so that the fluid must in the first instance be pumped out, which violent and sudden evacuation may be attended with evil consequences. But, on the other hand, in effusions of long standing, which have already attained to partial organization and shrivelling of the product of inflammation, the injection will be inefficacious, because the lung can now no longer fill the space previously occupied by the fluid exudation, especially as the investing false membranes must first be broken up by the lungs, which is not conceivable. But even if this should take place, a sudden evacuation could be followed by no favorable result, because necessarily there must be ruptures of the pleuritic adhesions and bursting of the compressed pulmonary parenchyma. Therefore, in a pleuritic effusion of long standing, it is only exceptionally that puncture is admissible, when the exudation is so considerable as to depress the diaphragm, to displace the mediastinum, and so to compress the lung that danger of suffocation supervenes. But how can the resorption of pleuritic exudations be induced? Experience shows that all those means which lower the pressure of the blood or augment the secretions, and therefore promote the separation of water from the blood, effect a diminution of the fluid effusion. Accordingly, venesections and diuretics may be indicated in cases of effusion; but these effects also occur spontaneously. In chronic exudations, which are already organized, such means will even be rather injurious, and the indication will be to employ remedies capable of dissolving solid exudations. Such remedies are iodine and mercury. The cautious employment of these means may therefore be adopted, and they are particularly suitable for external application. Professor Skoda has for some years employed these means experimentally, and has often seen pleuritic exudations rapidly diminish after the use of mercurial oint-

ment, iodine ointments, iodide of glycerin, and black oxide of copper in the form of ointment. It is self-evident that in all chronic pleuritic effusions the diet must be good, in order as much as possible to counteract their injurious effects upon the system at large.—*Dublin Quart. Jour.* Aug. 1860.

Explosion of Fulminate of Mercury under Water.

By H. Kroeschell, Assistant Chemist at the University of Nashville.

A very small quantity of this explosive preparation, made for charging percussion caps, had, during the day, accumulated on the bottom of a sink lined with zinc, of which I was well aware, and wishing to remove the same (being mixed with sand and other refuse bodies), I proceeded to take up said mixture with a glass-plate. In scraping on the zinc and causing friction, a considerable explosion took place, throwing the muddy water all over my body and against the ceiling. Previous to this accident I had spent at least five minutes to cleanse said waste-trough by letting the hydrant run, so that at the time of the explosion there was at least one inch of water in the trough.

There is, according to my knowledge, no such accident on record, wherefore I think it proper to report this case, and to caution other operators: on the other hand this quality of Fulminate of Mercury may give rise to a more extensive use of it.—*Nashville Jour. of Med. and Surgery.*

Editorial.

We owe our readers an apology for the delay in getting out this number of the Journal. We have been regular and even punctual heretofore; but frequent and long absences from home, since the battle of Manassas Plains, in the discharge of official duties as the head of the Medical Department of our army, have prevented our getting to press earlier. And even now, we shall not be able to entertain our readers with reviews or editorials. There is not much to write about indeed excepting our army; and our readers will exclaim perhaps, 'you gave us enough of that in the last number.' Well, we do not know about that, if it had been of the right kind. At any rate, we do not think it possible to say too much of our army. Future ages will sing its praises, and record its sacrifices and deeds of daring as the heroic achievements of the age. Then it should be our special care and pride now, by every possible means in our power, to lessen its privations and sufferings.

North Carolina has done nobly in the provision she has made for her soldiers. The individual and associated efforts of her citizens have done much. There is no fashionable gaity or dissipation of any kind in her borders. Every nerve is touched, every exertion made, in behalf of the war. All feel that too much cannot be done for the brave men who have quit their homes and family altars, with all the quiet and happiness and plenty that reigned around, to risk their limbs and lives in defence of the liberties of our country, and of the security of our wives and children, amid discomforts and privations of which they had no previous knowledge or conception. We ourselves have seen the sick and suffering and dying soldier, away from home and friends, and in the lone tent, quietly

yield up his life without a murmur of complaint, and almost with his last breath pray for the success of a cause in which he had suffered so much without the opportunity of striking one direct blow in its defence. This is true bravery, unsupported by the emulous spirit and confidence of numbers

> ——— "All the while
> Sonorous metal blowing martial sounds."

It is the deliberation of high patriotic purpose and conscious rectitude that is infinitely superior to the mere enthusiasm of excited courage. Thus it will be seen, that the shock of armies in the fierce conflict of men in battle array is not all of war. The thicket, the lone road side, the quiet tent, the march and bivouac over mountain top and plains and through valleys, tell another and a different tale. Then let us do all that we can for our soldiers. Money, individual exertion, associated effort are as nothing in comparison with the health and lives of our brave men. We must spend our money freely, and exert ourselves to the utmost to promote the comfort, insure the health and take care of the lives of our soldiers.

Subscribers.

If there is any one who has paid his subscription to the Journal for this year, whose name does not appear in the published list of this number he will confer a favor by informing the editors of it.

Announcement.

In consequence of the existing war between the governments of the Confederate States of America and the United States of America—the proximity of this point to the territorial line dividing the combatants—the possibility that

this vicinity may, in the course of the ensuing six or twelve months, become the theatre of hostile operations—the excited condition of the public mind generally, and especially among that class of the community yielding pupils to institutions of medical learning—the unfiitness for receiving instruction, either satisfactory or profitable, which necessarily results from this state of mind—the large number of the youth of the country who are already in the military service—the stringency everywhere prevailing in regard to pecuniary matters caused by the posture of affairs above described—and the fact that *four* of our corps of teachers are employed in professional positions connected with the army, the Faculty of Shelby Medical College have deemed it proper to announce that the Winter course of Lectures for 1861–2 will not be opened, and that this suspension of exercises will be continued until further notice.

JOHN H. CALLENDER, M. D., Prof, Therapeutics, etc.
THOMAS L. MADDIN, M. D., Prof. Surgery.
DANNIEL B. CLIFFE, M. D., Prof. Anatomy.
J. J. ABERNATHY, M. D., Prof. Theory and Practice.
DANIEL F. WRIGHT, M. D., Prof. Physiology and Pathology.
HENRI ERNI, M. D., Prof. Chemistry.
JOHN P. FORD, M. D., Prof. Obstetrics, ect., and Dean of Faculty.
H. M. COMPTON, M. D., Demonstrator of Anatomy.

Nashville, Aug. 22, 1861.

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CONTENTS.

ORIGINAL COMMUNICATIONS.

A Reply to Dr. W. T. Howard's Review of the "Essay on Malarial Pneumonia," which appeared in the Transactions of the Medical Society of North Carolina. By O. F. Manson, M. D. 541

SELECTIONS.

Military Surgery.

Material for Armies, Recruiting, Clothing, Food, Encampment, etc. 588

Practice of medicine.

Typhoid Fever, 627
Bed-Sores, 632

Obstetrics.

Dysmenorrhœa, 635
Puerperal Fever—Turpentine, 639

Therapeutic.

Indigenous Remedies of the Southern Confederacy, which may be employed in the Treatment of Malarial Fever, 641

Medical Staff of the Army.

A Plea for the Medical Staff of our Army, 659

EDITORIAL.

Our Army Surgeons, 675
Subscribers, 675

NORTH CAROLINA

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VOL. III.] NOVEMBER, 1861. NO. VI.]

Original Communications.

A Reply to Dr. W. T. Howard's Reviw of the "Essay on Malarial Pneumonia," which appeared in the Transactions of the Medical Society of North Carolina.

BY OTIS FREDERIC MANSON, M. D. MEMBER OF THE MED. SOC. OF N C.

(*Continued.*)

THE DELIRIUM OF MALARIAL PNEUMONIA.

In addition to the grave array of symptoms, which we have noticed, as attending the career of the disease under discussion, we have lastly to consider—delirium.

In our essay, the following observations, with others, occur in relation to this symptom.

The presence of delirium, is more common in the malarial, than in the simple form. In the former, it is usually distinctly *intermittent* or *remittent*, in the *early stages*. At that period, it is also, usually mild in its character, the patient seeming to be in a state between sleep and awake, muttering incoherent and rapidly changing fancies, but when fully aroused, and his attention directed, replying in a rational manner. The delirium is evidently of a *neuralgic** character, being often associated with a cool skin and

*This as every intelligent reader will at once perceive was a typographical error and should have been *neurotic*.

feeble pulse, with no other symptom (i. e. besides the delirium) belonging to organic cerebral lesion, and like the hallucinations of delirium tremens, to which it bears many, and striking resemblances, is *relieved* by *sleep*, to *recur again* however, in the febrile *paroxysm*. Delirium, however, supervenes under other circumstances, which although we have already noticed, constitutes such an important feature, as will excuse a repetition. Often without any previous cerebral symptoms whatever, after the pneumonic symptoms have been mitigated or have entirely disappeared, and confident hopes are entertained of the patient's recovery, a furious delirium suddenly occurs. The reader will perceive, that we have here described delirium, as occurring in two distinct forms in the malarial disease.

1st. *Mild* delirium, of an *intermittent* or *remittent* type; presenting itself in the *early stages*, and

2nd. *Fierce* delirium occurring as a *fatal* symptom towards the *close* of the *disease*.

On these heads, our critic sums up his views in the following declaration: "We cannot admit that delirium either by the *frequency* of its occurrence, the *time* at which it occurs, or by *its character* offers *any special indication* of pneumonia imbued by the poison of *malaria*." We beg leave to subject this "most lame and impotent conclusion" to a brief examination.

1. Frequency of occurrence. The decision of our reviewer, that the frequent occurrence of delirium in Malarial Pneumonia possesses *no* diagnostic *value*, is based upon the fact which he cites, that "it occurs sufficiently often in the course of Simple Pneumonia, to be prominently noticed in the writings of many eminent observers," among whom he refers to Grissolle, Louis, Andral and MM. Hourmann and Dechambre. Let us examine these.

1. Grisolle, Louis, and Andral. As the views of these writers are all quoted from the work of the former, we will follow our reviewer for the sake of convenience. It is

true, as stated by him, that Grisolle states, that "in two hundred and ninety cases of pneumonia observed by him, twenty-seven presented delirium of more or less intensity at certain periods of the disease," but this by no means supports the view that delirium in simple uncomplicated pneumonia is a very common symptom; for after stating that "the habit of drunkenness, ought to be regarded as one of the most frequent causes which provoked delirium in the course of pulmonary inflammations." Grisolle adds, "that in *one third* of the cases of delirium of which he had spoken the patients were habituated to frequent excesses of wine or drank daily, great quantities of strong liquors, and especially of French brandy. Now if we deduct these cases which even our critic cannot contend were *simple cases*, we shall then have only eighteen cases presenting delirium in the enormous number of two hundred and ninety patients affected with pneumonia, certainly a very small proportion indeed, and which would not probably be less, in any acute febrile disease. If to these cases, we also add, those quoted by Grisolle from the works of Louis, Andral and Briquet, (twelve of the cases of the latter also being drunkards) we shall have four hundred and thirty-five cases of pneumonia, in which delirium occurred in only fifty-four drunkards included, and deducting the number of the latter, of which there were thirteen, we have in these four hundred and thirty-five cases, only forty-one cases, presenting delirium at any period of the disease, and three hundred and ninety-four cases presenting no symptom of mental disturbance at all. When we remember that these patients were affected with a grave disease, and that disease pneumonia, we must be surprised that the brain exhibited no disorder of function, in this overwhelming majority of cases.

2. *MM. Hourmann et Dechambre.* Astonished as we have been already, by our critic's strange exhibitions of erudition, we must confess to a greater degree of amazement, at his introduction of the old woman of Salpêtrière, into a discussion concerning the relative frequency of de

lirium, in simple and malarial pneumonia. Differing widely, in its usual symptoms, signs,* course, duration and termination, from the pneumonias of persons of ordinary ages, the pneumonia of the aged, may be regarded as an unique disease. Presenting peculiarities never, or seldom witnessed, in the adult, its delirium if it can be so called, also presents phenomena, so entirely different, from those of the former, that it will only be necessary, to transcribe the description of MM. Hourmann and Dechambre, to show how little relevancy, it bears to the subject under discussion. To complete the *tableau special*, presented in the "*pneumonie chez les vieillards*," these authors state, "It rarely happens that pneumonia passes through its stages without disturbance of the intellectual faculties. This is commonly observed at the period of supuration, but often, the mental disorder becomes evident much earlier. This disturbance *may* consist in a *real* delirium, either transient or persistent, either active or passive, and usually increasing in intensisty towards the approach of night, *More often and this character is peculiar with the aged*, it is *not* a *perversion* but a simple *decay* of the cerebral faculties. There is *neither incoherence* in the words or *extravagance* in the *acts* of the patient, but they present a state of *remarkable hebetude*. They scarcely comprehend the most simple questions; the memory of the most recent events escapes them, and it is impossible to obtain an exact knowledge of their feelings. They remain *taciturn* and soil their beds *unconsciously*."†

Such is the picture evidently drawn from nature of the mental condition in the pneumonias of the aged, decrepid actors in the—

* We are rather surprised that our critic should rocognize the cases as pneumonia as M. M. Hourmann and Dechambre state, that in the pneumonia of the aged that "le rale crepitant tel qu'el s'entend chez l'adulte est extremement rare."

† Recherches cliniques pour servir à l'histoire des maladies des vieillards; faites à la Salpétrièra Archives Genérales de Médecine, Tome xii. 164.

"——— Last scene of all
That ends this strange eventful history,"

whose delirium, is "mere oblivion," and has but little more connection with the subject of this controversy, than the elderly inhabitant of the moon.

So much for the testimony gathered by our reviewer, from the monograph of M. Grisolle. Accepting the statistics presented, as being all cases of Simple Pneumonia, which we have reasons for doubting, delirium is not therein presented, more often, than we should reasonably expect, or indeed is really found, in most affections of an acute character, attended with active fever; and we therefore find, that the large majority of writers, place but little stress, upon the occurrence of delirium in simple pneumonia.

"*Rarement*, on observe du delire," says Nalleix.[1] "*Some cases*" Chomel[2] simply remarks "present insomnia and delirium."

"*Now* and *then*," Barlow[3] remarks "delirium occurs especially towards night."

Delirium coma and convulsions are rare "observes Walsh.[4]

"It is a rarer case for the head to suffer, Williams[5] declares, whilst if we accept the testimony of Swett,[6] a favorite and frequently cited authority of our reviewer's, delirium must indeed be an exceptional occurrence in the simple form. "In a primitive pneumonia" observes this writer, "although at the closing scene in fatal cases, the intellect may sink into coma and low delirium—yet as a *general rule*, the *intellectual powers* are *remarkably sustained*

[1] Guide du Médecin Practicien, i. 436.
[2] Dict: de Med. xxv. 171.
[3] Manual of the Practice of Medicine, Amer. Ed. 188.
[4] Diseases of the Lungs and Heart, 298.
[5] Cyclop. Pract. Med. iii. 610.
[6] Diseases of the Chest, 105.

in this disease. The *coolness* and *composure* which mark its progress, like the sanguine expectation of recovery which belongs to phthisis, is to me one of its most striking and pathognomonic features. This composure continues often until the close of life or until near this period, when a slight wandering of the intellect, or a tendency to coma may supervene, *as indeed, happens* in most diseases."

We therefore hold it to be proven, not only from the testimony adduced by us, but also from the authorities cited by our critic, that Delirium is neither a prominent or very frequent symptom in Simple Pneumonia.

Let us now turn to the malarial disease. If we adopt the opinion of our reviewer which he has prefixed as a text to his essay, that this disease, is "ordinary pneumonia, complicated by the impression of a malarial law," or the clearer statement of La Roche, endorsed by him, that it is a "*hybrid* disease—a union of two distinct and dissimilar affections, viz: Pneumonia and Malarial fever, then we must be forced to reject the conclusion of our reviewer, that "the frequent occurrence of delirium, "offers no indication of pneumonia imbued by the poison of malaria." As we have before remarked, when we turn to the pages of those who have illustrated the subject of Malarial fever, we cannot fail to be impressed by the vast number of observers, who have located its pathology, or its *point de depart*, in the nervous system of relation; the majority of whom, have been early led to adopt this view, from the observation of the phenomena prescribed during life. Among these phenomena, the frequent presence of delirium, has been almost universally noted, and we are at a loss to refer to a single high authority, who has treated the subject *ex professo*, who has not specially dwelt upon the disturbance of the intellectual functions, in Periodical fever. The pages

of Lancisi,[1] Ramazzini,[2] Morton,[3] Werlhof,[4] Torte,[5] Senac,[6] Cleghorn,[7] Sarcone,[8] De Haen,[9] Trnka,[10] Morgagni,[11] Lind,[12] Alibert,[13] Chomel,[14] Bailly,[15] Monfalcon,[16] Nepple,[17] Maillot,[18] Mongellaz,[19] Bonnet,[20] and Gintrac,[21] abound in chapters of cerebral accidents, such as coma, convulsions, apoplexy and delirium, and the frequent presence of these striking perturbations of the cerebro-spinal functions, obviously led Hoffmann,[22] Fodera,[23] Morton,[24] Quarin,[25]

[1] Opera Omnia (De Noxiis Paludum Effluviis) Romæ, 1715, Tome, i. 361.

[2] Opera Omnia Med. et Phys. (De abusu chinæ chinæ) Genevæ. 1717, 228.

[3] Opera omnia (Febris interment) Sugduni 1737, Tome i. Dissect; cit: p. 33.

[4] Opera Medico; Hannoveræ; chap. cclxxv; 54.

[5] Therepeutice specialis ad Febres periodicas perniciosas Leodiil 821, ii. 88, 246.

[6] De recondita Febrium Int: Amstelodami, 1759, cap. xx. 113.

[7] Observations on the epidemical diseases of Minorca, 3rd, ed. London, 1768, 159, 165, 1761, 218.

[8] Hist: raisonée des Maladees: obs: á Naples 1805, ii. 232.

[9] Ratioris Medendi. 1765. iii. 332,

[10] De. Feb. intermittent: Vendobonæ,1775, 141.

[11] De sedibus et causis morborum, 1779; iii. 16, 17,

[12] Diseases of Hot climates, London, 1808, 334—5 et passin.

[13] Des Fiévres (fievre pernic: int. delirante,) 46, Paris 1820.

[14] Des Fiévres, Paris 1821, p. 391.

[15] Traité des fievres intermittentes, Paris 18.5, p. 155 et passim.

[16] Historie Medicale Des Marais, Paris 1826, 290—5.

[17] Fievres int: et remitt, Paris 1828, pp. 68, 72–4–9, 81, 95, 112, 117,

[18] Traité des fievres, Paris 1836, pp. 27, 49, 52, 55, 60, 65, 69, 72, 75, 80, 82, 85, 89, 93, 98, etc.

[19] Monographie des Irritations Intermittentes, i. 295—318, Paris, 1839.

[20] Traite des Fievres int. Paris, 1853, 82—98.

[21] Pathologie Interne Paris, 1853. pp. 724, 730–8, 743.

[22] Opera Omnia Geneva, 1758, i. 305.

[23] Lecons sur les Epidemics, ii. 193. Paris, 1823.

[24] Op. cit. Febr. Int. 29.

[25] De Febribus et Infl. p. 155. Viennæ. 155.

Borelli,[26] Stoll,[27] Boerhave[28] and Van Swieten,[29] to consider Periodical fever as an affection of the nerves, or nervous fluid, and mainly induced Tode,[30] Hildenbrand,[31] J. P. Frank,[32] Rayer,[33] Guerin de Manners,[34] Maillot,[35] and Ford[36] and Campbell of our own country, to locate its seat in the cerebro-spinal axis.

Indeed, in ordinary attacks of malarial fever, of moderate severity, we believe that there exist but few instances in which more or less intellectual disturbance, does not occur at the acme of the exacerbation. In young persons, it is well known, that convulsions frequently usher in the paroxysms, and so frequently is delirium witnessed in all ages, that many of the French writers have devoted whole chapters to the special consideration of "*les fièvres pernicieuses delirantes.*" Well and truly observed Senac who is justly esteemed a classic authority on malarial fever, "*venenum febrile* ut jam innuimus, *mentis arcem solet aggredi,*" and likewise Lancisi who remarks that the "noxious effluvia of marshes"—"per arterias carotides *evehendo. cerebrum,* ac *nervos* ita *irritant,* atque *implent* ut non modò *dolores,* ac *delirium,* sed *convulsiones* quoque, *soporem,* ac denique *apoplexiæ speciem* gignant." Yet in the face of facts like these concerning a class of diseases, in which functional disturbances of the brain are so common, that the most celebrated authorities in malarial fever, have been, as it were

[26] De Cognos et curaud, morb. 755.

[27] Aphorismes traduit par Mahon, p. 110.

[28] Van Swieten's comment (Edinb. transl. 1776) vol. 7, 203.

[29] Ibid et loc. cit.

[30] As quoted by Buiserius, (Inst. of Med.) W. Cullen Brown's trans 1, 127.

[31] Medicine Pratique tr. par Gauthier, ii. 219, 223.

[32] Medecine Pratique, tr. par Goudareau, i. 21.

[33] Dict. de Med. (en 25 vols.) tome xii, 343.

[34] Jour. des progres: des sci; Med. ii. 46.

[35] Traite des fievres, ed cit. pp. 138, 283, 236.

[36] Southern Med. and Surg. Journal, vol. i. p. 335, Nov. 1836.

[37] Report on the Nervous System in Febrile Diseases in the transactions of the American Medical Association, xi. 351 (in 1858.)

impelled, to locate its proximate cause in the cerebro-spinal centre, our critic declares that he "cannot admit that delirium by the *frequency of its occurrence* offers any special indication of pneumonia imbued by the *poison of malaria.*" According to this declaration, admitting the doctrine of our critic that Malarial Pneumonia is a conjunction of malarial fever and ordinary pneumonia, and that delirium is a frequent and prominent symptom of the latter, then we are forced to adopt the illogical and absurd conclusion, that when both of these diseases, each having a special tendency to pervert the cerebral functions, are united, that these functions would not be more apt to suffer, from the combination of causes, than from either, when acting singly and alone.

2. Character of the delirium. As we have before remarked, we have noticed delirium as presenting itself in two different forms, viz: Mild delirium, of an intermittent or remittent type, occurring in the early stages, and Fierce delirium, supervening towards the close of fatal cases, of the malarial disease.

On this point, our critic sums up in the following declaration: "We cannot admit, that delirium . . . . . by its *character* offers any special indication of pneumonia imbued by the poison of *malaria.* In order to reply clearly to this position, we will first consider, the mild intermittent or remittent delirium, as under that aspect, it is observed at that stage of the disease, in which it renders the most valuable assistance in the diagnosis. And first, let us revert again to the text of our critic's review—"What is Malarial Pneumonia? Is it a disease so distinct and different from ordinary pneumonia, as to be unlike in character and nature? Or is it almost always but the ordinary form, complicated by the impression of a malarial law?"

We will not underrate the intelligence of the reader, by an endeavour to prove that *periodicity* is the characteristic and conspicuous attribute, of all diseases claiming a malarial origin, and in all affections with which that element is

associated, that the character of *paroxysm*, especially pertains to this class of diseases, and that the fever, and all its consequences, and accompaniments are subject to regular periods, of increase, decline, remission or intermission. Nor does delirium, evince in a manner less evident, the operation of the subtle agency at work; having its regularly recurring periods, of appearance, increase, decline and cessation. These facts our critic in considering this symptom entirely disregards. So intently is he engaged in controverting our positions, that he forgets his own premises and abandons the principles which he himself at the inception so boldly promulgates. In the ardour of the contest, he nullifies his own "*malarial law;*" "*Inter arma silent leges;*" and lo! the imposing excuse he offers for thus trampling on his own tenets, hear him!

"Dr. Manson states that in malarial pneumonia the delirium is usually distinctly intermittent, or remittent in the early stages, and is usually mild in its character etc." But every one must have observed, that delirium is usually greater during the intensity of the fever and oftener at night, when only it may exist in all febrile affections in which it is a prominent symptom and in this sense may be said to be "intermittent or remittent," *just as it is*, when present during the paroxysmal exacerbations of the fever in "malarial pneumonia."

We feel sure that no intelligent observer of malarial disease, will yield a momentary adherence to these views. According to this statement, the delirium of continued fever, and other febrile diseases is attended with the same periodical variations as in Periodical fever *par excellence*, than which we need only say, that nothing could be more erroneous. According to these views, the exacrebations of malarlal fever, recur regularly *every night* "*just as it is*" in all other febrile diseases," than which nothing could be more utterly unfounded; for it is as certain on the contrary, that the exacerbations of periodical fever, recur according to the *type*, commence immediately after the termination

of the cold stage, and do not wait for the approach of night, "just as it is" in all febrile affections." Nor do we need any other authority to prove the error of our critics views than his own declarations. In his resumé written some two hundred pages, after the above he holds the following language, in relation to the symptoms "we must chiefly, rely upon as diagnostic." "In pneumonia impressed by a malarial influence the daily exacerbations of the fever, are in a great many instances accompanied by the *phenomena* that are *generally so prominent* in the *ordinary forms* of *periodic fever*, that is to say, besides the increased heat of skin, accelerated pulse and more urgent thirst, the febrile access is announced by returning headache, pains of more or less violence in the small of the back and the limbs, especially an aching in the legs and perhaps nausea. If these symptoms had subsided during the remission of the fever, or if they had merely abated without ceasing entirely, they now become more prominent and distressing and continue until the subsidence of the fever, when again they are less severe and disappear entirely," and again "In the absence of the chill it is by noticing a *marked display of periodicity*, a peculiar *acuteness* and *distinctness* in the *febrile phenomena* we have described, that the complicated character of the pneumonia may be most *certainly ascertained* and in proportion as they are *prominent* and easily recognized, is the diagnosis rendered sure and easy." Here certainly we may allow the discussion on this point to rest, although our reviewer does not include delirium among the "*febrile phenomena*" in the above extracts, yet as it has been seen that he has insisted on the "frequency of delirium" in "ordinary pneumonia" and holds this latter to be one of the parents of the hybrid disease, he cannot deny that this symptom, like the other "*febrile phenomena*," reflects the impress of the "malarial law," and such indeed is the fact. The periodical character of the delirium is just as distinct, as it needs must be, as any other phenomena in the paroxysms of periodical fever. Like the other febrile symptoms,

it is remitting or intermitting and more often of the latter type. It usually increases in violence *pari passu* with the febrile excitement, is most conspicuous at the height of the exacrebation, whenever this may occur, and does not necessarily occur at night,* unless that should happen to be the regular period, for the return of the paroxysm. We therefore adhere to our text. We have never penned anything more true, than our observations on this symptom; indeed they could not be otherwise, for they were made at the bedside. In the words of Maillot, "*Ce que j'ai vie, je la raconte.*"

The Final Fatal delirium. To close the discussion of the symptomatology of malarial pneumonia we have lastly to notice the strictures of our critic upon our observations concerning the peculiar delirium which often attends its closing scene. We reproduce the remarks on this point found in our essay, in addition to those already quoted; "A new symptom now sets in. The patient who before may have been entirely rational, or only slightly incoherent in sleep, or at the height of the exacerbation, suddenly becomes wildly and persistently delirious. The cough now often ceases, the patient often breathing apparently better than when in a more hopeful condition * * * * * The delirium increases in intensity, the patient growing almost uncontrollable and requiring force to keep him in bed and when not watched, rushing out of the house when nearly pulseless and cold. Quiet only succeeds to this raving, to be quickly succeeded by the curtain falling on this last scene of the agonizing drama."

In all this, however, our critic declares that there is nothing peculiar to or diagnostic of malarial pneumonia, as according to MM. Louis and Grisolle, delirium of every degree of intensity is also observed in the simple form. It is true that these writers both mention delirium of a mild

* In a case reported by us the delirium came on about noon every day. See Va. Med. Journal, 1859, page 92.

and furious character as occurring in the latter form, but they no where render any account of it having presented itself under the circumstances which we have recounted. In the cases from which our observations were drawn the patients would often seem to be suffering from a mild attack of the malarial disease without the presence of any symptom denoting danger. In some of them the pulse had been but little accelerated, the respiration almost normal, the head free from pain and the intellect previously clear. In fine, they were just such cases as we might reasonably promise ourselves, would soon terminate happily; but to whom, we would next be suddenly summoned, and find them in the state described. We have noticed that in this hopeless condition, the cough had almost or entirely ceased and the respiration was sometimes so free and easy, that an observer ignorant of the previous history of the case, would hardly suspect that the patient was a victim of pneumonia. Nor, in truth is it so. The patient dies precisely like those who die of Remittent fever. He dies from the action of the febrile poison on the brain. On a careful examination of one of these patients just before death, the chest was found to be resonant throughout and the natural respiratory murmur could be distinctly heard almost everywhere. The patient does not usually in such cases perish from the lesion of the lungs, but sinks under the perverted functions of the brain. Nor is this delirium symptomatic of the lung affection, for it may occur when the pectoral symptoms have been mitigated or have entirely disappeared.

The quotation from Cleghorn. As we had nowhere seen this sudden and unexpected termination of pneumonia in a fierce and fatal delirium so well described as by Cleghorn, we thought proper to introduce the following quotation: "Besides some *abatement* of the fever, which happened *every morning* it was remarked, that upon the third day or beginning of the fourth there was frequently a great *remission*, sometimes a *total cessation* of *every violent symptom*, so that the sick were *thought to be out of danger* but on the

fourth or fifth, a *delirium suddenly came on* or the breathing became more difficult then ever and one or both of these symptoms increasing hourly, the patient expired *either* suffocated *or raving mad*," etc.

Upon this brief extract, our critic has thought proper to bestow a lengthy and labored notice. He declares that he "cannot see the appositeness of the quotation or in what manner it strengthens his (our) cause," and that he "imagines that the symptomatology of few diseases has undergone changes so great, as those that distinguish the affection described by Cleghorn and Dr. Manson." In other words our reviewer would have the reader believe that we have committed an egregious blunder in citing the account which Cleghorn gives of the unexpected and fatal delirium and that this symptom as described by that writer occured in a disease entirely distinct and different from that forming the subject of our essay and therefore is entirely foreign to the matter in hand. It will only be necessary to quote the previous observations of Cleghorn on the "epidemic pleurisy of Minorca, to prove, that it is our critic who has blundered and not ourselves. We trust that we shall be excused for doing this, not only because of its connection with one of our most interesting endemic diseases, but also because it displays the changes which the malarial form of pneumonia has undergone, since the period at which it was written.

From his chapter, entitled "*Of the Pleurisy* and *other inflammatory Fevers frequent* in the *winter and spring months*," we make the following extracts: "The *anniversary epidemical fevers* in Minorca may be divided into two classes which at present for distinction's sake, we shall call the Summer and Winter Fevers—Both these classes of Fevers and indeed almost all others which happen in that climate whether primary or symptomatical diseases, may be termed *periodical*, having *remissions* at intervals more or less considerable: But those of the Summer, as has been already observed generally assume some one or other of the *tertian*

types, being worse one day and better the next alternately. Whereas the *winter fevers* though they often *counterfeit* tertians especially in their *beginning*, yet for the most part have *exacerbations* equally strong *every day*, coming on about noon, *with* or *without cold shiverings*, and terminating towards morning, sometimes with *gentle sweats*, sometimes without any sensible evacuation. * * * * As the generality of them (winter fevers) is called *Mal de costat* by the vulgar and the *Pleurisey* by physicians from their being accompanied with pains in the side. I have in *compliance* to *prevailing custom* retained that name in the title of this chapter, though it will appear in the sequel, that they ought rather to be termed *Peripneumonies*, agreeable to the observations of Lechius, Hoffman and others. These Pleurisies began commonly like an ague fit, with shivering and shaking, flying pains all over the body, *bilious vomitings* and *purgings*, which were soon succeeded by quick breathing, immoderate thirst, *inward heat, headache* and other feverish symptoms. In a few hours the respiration became more difficult and laborious, the most part of the sick being seized with stitches in their sides, striking upwards to the clavicle and shoulder-blade; obliquely downwards along the cartilages of the bastard ribs, or else darting across from the breast-bone to the vertebræ of the back so that they could neither cough, nor make a full respiration without great pain.

Many were drowsy and inclinable to sleep, but they *raved* at *intervals*, or were much disturbed with extravagant dreams. Some laughed in their sleep; others would awake in a fright and start out of the bed imaging that the house was in flames; that those about them were endeavoring to push them over a precipice; to pierce their sides with daggers; to bind them down with cords or iron hoops and things of the like nature.*

Here follows the quotation already cited.

*Diseases of Minorca, chapter vi, passim.

Such is the description given by Cleghorn. The reader, who is not blinded by a critical furor, like our reviewer, will at once be impressed with the striking resemblance between the narrative of this writer and the sketch given by us. Prevailing in a locality where miasmatic fever was annually epidemic "from July to January," the attack ushered in by an ague and its course, marked by regular quotidian exacerbations, "coming on about noon, with or *without* cold shiverings; attended with thirst; inward heat, headache, bilious vomiting and purging, with delirium, remittent or intermittent, in the early stages, and with fierce delirium in the final scene, it presents a picture so graphically portrayed that the physician familiar with the subject must instantly recognize the likeness between it and the bilious or malarial pneumonia of our southern clime.

But our critic cannot "perceive the appositeness of the quotation. And Why? What is it that so completely obscures his vision? Why cannot he recognize the vital phenomena as clearly drawn as they possibly could be in a brief sketch and which are identical in many respects with those declared by him to be characteristic of "pneumonia complicated by the impression of a malarial law." Why forsooth because in the disease described by Cleghorn, the grade of the febrile reaction, as well as the examinations *post mortem* denoted "a vehemently inflammatory disease" instead of presenting the congestive character of the present day.

The reader will at once perceive that these objections are merely specious and indefensible. According to this view a disease altogether loses its identity when it varies in its grade. Admit the validity of these objections and the pneumonia of the present day is no longer entitled to the name of pneumonia because it does not present the same vigorous reaction and bear the heavy bleeding which it did, (as we are told,) some thirty or forty years ago. According to this view the sketch which Drake has given of Bilious or Malarial Pneumonitis is not a correct description of that disease because he declares that some of the *most dangerous*

cases are the *least inflammatory*," "that the condition of the lung is more *congestive* and the functional disturbanee of the lungs results largely from *sanguineous engorgement* and *retarded transmission of blood* through the organ," yet our critic as we shall see has fully endorsed "his portraiture of the prominent features of the disease" and declared that "the able author fully appreciated the malarial complications of pneumonia." The same objections would equally apply to the Notes of Chapman's lecture on "Congestive Pneumonia" because it represents the affection as being attended with the "heaviest *congestions*," instead of "the vehemently inflammatory disease described by Cleghorn."

With these observations we close our reply to our critic's examination of our views in regard to the symptoms and rational diagnosis of Malarial Pneumonia. The correctness of our delineation as well as the strictures of our reviewer we cheerfully leave to the final judgment of the reader.

THE STANDARD AUTHORITIES ON MALARIAL PNEUMONIA.

We have stated in our essay, that the disease under discussion was "only cursorily and imperfectly noticed by any of the modern standard authorities." To this our reviewer replies that he is "*now prepared to inquire whether we are so poor and destitute of reliable information as our author alleges.*" In characterizing the notice which this disease has received from the standard authorities as *cursory and imperfect* we by no means desire to be considered as declaring that it had received no consideration or that no valuable information could be found in relation to it in their pages, nor can the sentence be justly construed as alleging that we are poor and *destitute* of reliable information in relation to it, as our reviewer interprets its meaning. We beg leave before proceeding further to offer a few explanatory remarks. When we regard this disease in all its bearings, its frequent epidemic prevalence,

the wide range of territory over which it prevails, and the fatality which attends its march, we should have reasonably expected that such an important disease, should have been minutely, accurately and perfectly studied. When we remember the declaration of Dr. Drake that it destroys more persons in the Southern states than all other diseases combined as well as the statements of others* in regard to its mortality amongst all classes of our people, we should reasonably suppose that a small volume might have been given to the subject, in which its history, pathological anatomy, etiology, symptoms, signs, march, terminations, complications, diagnosis and treatment should have been clearly and elaborately displayed. But such has not been the case; a page or two, and more often inded, a few lines are all that have been devoted to its consideration by authors, except by M. Grisolle a French writer, who as we shall prove in the proper place, having no practical knowledge of the subject, has disarranged the few scanty materials which others had supplied him. These facts are therefore sufficient to prove, that the notice of this disease by modern standard authorites have been mere sketches, in which the subject was necessarily treated in a brief and cursory

* "It is incident to nearly every climate and to every season. It is sometimes epidemic. As such it has several times appeared in the United States. In the year 1812 it spread over the country with an unexampled mortality."

"In epidemic instances 9 out 10 perish," Chapman (Benedict's comp.)

"Rush, Wistar and Dorsey died of it." Ibid—Jour. Med. and Phys. Sci. i. 181, Phila. 1820.

"Fatality extreme and sudden." Day. N. O. Journal, ii, 579.

"Destroys more negroes than all other maledies combined." Gibbes, Amer. Jour. Med. Sci. 4. 289.

"A large proportion of deaths among negroes may be traced to it." Jones, N. O. Jour. 7. 179.

"Fatality most dreadful among the Indians, it sweeps them off by hundreds." Glison, Army Med. Report, 1839-'54, p. 276.

"More fatal than any other disease in negroes. Cartwright, N. O. J 7. 699

manner. That it has been imperfectly delineated, will be as easily established. We therefore proceed to examine the descriptions of these authors in the same order in which they are introduced by our reviewer.

1. *La Roche on Bilious or Malarial Pneumonia.* It is perhaps known to the reader that this author has written a voluminous work of 500 pages on the "supposed pathological and etiological connection between Pneumonia and autumnal fevers, including an enquiry into the existence and morbid agency of Malaria." The work is purely theoretical and was so intended. The writer does not even attempt a description of the disease and therefore cannot be considered an authority on the subject. We have perused this treatise with much care and great interest, and whilst we accord to the author his due award for his industry and ingenious handling of his materials, there are many portions of the work which are unsatisfactory and we are convinced that the tendency of the whole as far as it has any bearing on the treatment of this and other southern diseases must be mischievous. Dr. La Roche however, whilst he does not attempt the description of this affection, endorses and quotes the account of Eberle, which he declares "embodies all that need be said on the subject," and in which opinion he is sustained by our critic. We quote the description as given by the latter:

Elberle's description of *Bilious Pneumonia*:

"This variety of the disease occurs during the cold and variable seasons, in districts abounding in sources of miasmatic exhalations. It appears to be the result of the combined agency of *koinio-miasmata* and atmospheric vicissitudes. The initial symptoms of this modification of the disease differ very little from those which usually usher in an attack of ordinary bilious remittent fever. In some instances, a sense of fullness and tension is experienced in the right hypochondrium, a few days previous to the supervention of the disease, and occasionally dysenteric symptoms occur before the fever commences. In almost all cases, considerable pain is felt in the back and extremities during the premonitory period. The skin from the beginning is more or less tinged with bile, and the conjunctiva, especially is often conspicuously icterode. The face is flushed

'and a sickly mixture of red and yellow, upon a close examination, betrays the existence of a disturbed state of the liver' (Potter.)' Acute pain in the forehead is almost constantly present. The pain in the chest is sometimes extremely severe and pungent; but more commonly it is obtuse and attended with a sense of weight of oppression in the breast. In some cases, the fever continues for several days before the pectoral pain supervenes. The expectoration is not very copious, the sputa being of a frothy yellowish appearance, marked frequently with streaks of blood. The fever is generally attended with *manifest evening exacerbations and morning remissions;* when vomiting takes place, an *occurrence very common in this affection,* more or less of *bilious matter* is generally thrown up, although, in some instances, the secretion of bile appears to be entirely suspended; the ejections consisting of nothing else than gastric mucus and the injesta. The tongue is at first white, with a yellowish streak along the middle, which as the disease advances, becomes dark brown and dry. The urine is always of a deep yellow or bilious color and the pulse is generally small, frequent, and quick, with a sligh degree of preternatural tension."

My old text-book at college! With feelings akin to Hamlet's when over the fleshless skull of his old palymate he exclaims with a sigh, "Alas! poor Yorrick! do I turn again to thee, the almost forgotten companion of my early days. Thy pages soiled and worn remind us how often by the midnight lamp we have bent over them in the firm faith that they would be a sure and faithful guide in the future, so that now, it seems almost like sacrilege to anatomize thee my ancient mentor. Truth, however, united to the more exacting calls of the most rigid of critics compels us to the task. We must obey. In the first place we must object to the predominant bilious hue which overspreads the portrait drawn by our old preceptor. Besides the sense of fullness in the hypogastrium which we never could get our patients to admit, he says that "the skin and conjunctiva from the *beginning* are tinged with bile." This we know is a mistake, it is only in the latter stages that these symptoms of jaundice appear and in a vast majority of cases they are altogether absent. Nor is "the pain in the chest commonly obtuse," but on the other hand the sharp stabbing pain, the *point de côte* is almost

universally present. Nor is our old friend more correct in saying that "the expectoration is usually of a frothy *yellowish* appearance, marked with streaks of blood," for the sputa are usually of a bloody hue. Nor do we often observe the "yellowish streak on the middle of the tongue early in the disease." Nor is the "urine always of a deep yellow or bilious color. On the contrary, it is of a deep red color. Nor is the pulse usually small, nor is any degree of "preternatural *tension*" its "*habitual* character."

It will be seen therefore that the only symptoms laid down in the above description which can be said to be *generally* present are "the acute pain in the forehead," the cough and the manifest evening exacerbations and morning remissions. Not one word is said about the cold stage as it is present in the grave or mild cases and which we hold to be almost universally present. The great prominence which Eberle gives to the bilious symptoms caused me often to fail in diagnosis in my early career. In the gravest cases they may be entirely absent and with the *exception* of the *bilious vomiting* which is the most common of the bilious symptoms, they are never present in the early stages of the disease, according to my experience. The distressing, persisting nausea admitted by our reviewer to be a characteristic, and which may or may not be attended by vomiting, is not mentioned by Eberle. We further call attention to the fact that Eberle declares in his recountal of its symptoms that simple pneumonia is accompanied with an *obtuse* pain, a notion which has been long ago exploded. In three hundred and ten cases observed by Grisolle the acute pleuritic pain was absent in only twenty-nine. If we turn to the treatment laid down by Eberle he is still more at fault. After dwelling approvingly on the employment of Bloodletting and free doses of tartar emetic (a practice condemned by every prudent practitioner in the Southern States at present, as well as by our critic himself) he only advises emetics in the bilious form, quoting Stoll in their favor whose pneumonia,

according to Chomel and Andral was merely catarrh with gastric derangement. Eberle is perfectly silent on the employment of bark or quinine in this disease, although he declares it to be the "result of *koino miasmata* and atmospheric vicissitudes." From the perusal of his chapter therefore, the young practitioner would shun the administration of quinine in this disease, now regarded as the principal and indispensable remedy by all skilful practitioners, and without which there is neither security or safety. Surely then the candid reader must admit that we have not underrated the chapter of Eberle in the declaration we have made, that this disease "is only cursorily and imperfectly noticed by any of the modern standard authorities." If our reviewer had been as candid as he is critical, he would have noticed the worse than worthless remarks of Eberle on the Treatment of Bilious Pneumonia. Give this work to the young practitioner without any other guide and we verily believe that he would not only fail in his diagnosis, but that he would soon lose half of his patients and all of his practice. The absurdity of the declaration of La Roche that this miserable caricature of a southern disease as drawn by Eberle, "embodies all that need be said on the subject," is only equalled by the literary toadyism displayed by our critic in endorsing it. La Roche indeed stultifies himself in asserting that Eberle could dispose completely and conclusively of a disease in a few lines, when he himself has consumed hundreds of pages in discussing its *etiology* alone.

Wood's description of *Bilious Pneumonia*:

"By far the most *frequent form of Bilious Pneumonia* is that which occurs as an associate of *remittent or intermittent miasmatic fevers*. This is a very *common disease* in the miasmatic regions of the United States; and is especially prevalent in the cold seasons, in the low lying parts of the western and southern sections of our country. The pneumonia may either be secondary, making its appearance after the fever has set in, or it may be primary, and, by the disturbance which it excites in the system, call the pre-existing tendencies of the miasmatic fever into action. It

occurs usually in the latter part of the autumn, in the winter, or in the early spring months, and appears to be caused by *vicissitudes of the weather*, acting on a predisposition acquired by exposure to malarious influences during the summer and early fall. It is most frequent and fatal in *seasons* which follow an *unusual prevalence of bilious fever*. It is very *common* among the blacks and colored population of the South. The name by which this complicated disease is perhaps most generally known in our country, is, *bilious pleurisy*. From the frequency of *acute pain* at the commencement, there can be no doubt that, as in ordinary pneumonia, the disease of the lung is often attended with *inflammation of the pleura;* and it is possible that, in some instances, the inflammation may be confined chiefly to that membrane; but generally the lungs are most deeply involved, as shown by the bloody expectoration, the physical signs during life, and the result of post-mortem examination.

The pectoral symptoms and physical signs do not materially differ, in this form of pneumonia, from those already described as characteristic of the uncomplicated disease. It is not necessary, therefore, to repeat them. The peculiarities are those derived from *the* miasmatic complication. In those cases in which the *fever is the primary affection*, the chill and febrile symptoms generally precede those proper to the pneumonia for one, two or three days, and sometimes a longer period. In other instances, the pneumonia and bilious symptoms pursue an even march. When the complicated disease is established, we have usually, besides the signs of pulmonary inflammation, more or less of the following symptoms, viz., headache, a yellowish, or yellowish white fur on the tongue, nausea and vomiting sometimes of bile and sometimes of the ordinary gastric fluids, a more or less yellowish tinge of the skin and conjunctiva, often a brownish color of the face arising from the mixture of the pneumonic redness with the icterode hue, and a deep colored, yellowish brown urine. The fever is always *remittent* generally with *daily paroxysms*, which, however, are often more severe on the alternate days; and occasionally the remission is so considerable, that the disease apears almost in the form of a quotidian or tertian intermittent. In the latter cases we may consider any existing fever in the intervals as sustained by the pulmonary inflammation. The *grade of inflammatory action is* in general *less elevated* than in ordinary pneumonia, and sometimes the fever assumes a *typhoid character*, the pulse becoming feeble, tongue brown and dry, and the mind often somewhat *wandering*. The cases of intermittent pneumonia, spoken of by writers, probably belonged to this variety of the disease. Under proper treatment, bilious pneumonia generally terminates *favorably*; though it may prove exceedingly fatal, when associated, as it sometimes is, with the more malignant forms of miasmatic fever."

The objections which we have to urge against Wood's description of this disease are :

1st. The undue prominence which with Eberle he has given to the bilious symptoms. Indeed it would seem that he had closely copied these symptoms from the account given by that writer. We have no hesitation in saying that these features are entirely overdrawn and that his canvas is so bedaubed with colors of flowing yellow as to render the likeness in the majority of cases unrecognizable. If the diagnosis as taught by this sketch is principally to be based on the bilious symptoms, the practitioner will often find at the bedside that he is deprived of these guides, and on the other hand, guided by these symptoms of jaundice, as represented by Wood to be peculiarly diagnostic of the malarial disease, he would often mistake the simple form for the former, as according to Grisolle our critic's "greatest authority," "with the exception of yellow fever, there is no acute disease in which a jaundiced hue of the skin and sclerotica are so often observed as in simple pneumonia."* Nor is the "fever *always* remittent" as stated by Dr. Wood, and if it were, it would not according to *his own declarations* be diagnostic, as he states, that in Simple pneumonia also "the fever often has a *remittent* character, the *exacerbations* occurring daily for the most part towards evening and accompanied with increase of pain, cough dyspnœa and bloody expectoration." If a practitioner indoctrinated with these views were called to a case of Malarial pneumonia in which the bilious symptoms were absent he would inevitably consider it as belonging to the simple form, or if viewing a case of the simple form with icteroid symptoms he would as surely consider it a malarial disease. In such straits would the "American practitioner" in all probability be placed if guided by this work which our critic with obsequeous servility terms his "Prayer Book."

* Traité de la pneumonie, 382.

3. The cold stage is not mentioned by Wood. We regard this as the pathognomonic symptom of Malarial pneumonia. Nor does this author notice the congestive character of the disease as distinguishing it from the simple form.

4. Dr. Wood's section on the "Treatment," we regard as open to many and serious objections. We have nothing to say in regard to his remarks upon bloodletting save that we think from their general tenor that the young practitioner would be led to employ it too often. It is only in rare and exceptional cases that the lancet is required or that it can be used with safety at all. We protest against the opinion of Dr. Wood that "in *general* the loss of twelve or fifteen ounces at the commencement is advantageous," in which our critic must unite with us as he has advanced opinions equally as heretical against the doctrines of his "prayer book."* Nor do we agree that it is a safe or commendable practice to prescribe after this an emeto-cathartic of tartar emetic followed by a purgative dose of calomel, a practice as we have seen also condemned by our critic who declares that "there is something peculiarly irritating in the association of these two articles" but who very unreasonably contends that "the calomel contributes most to the deleterious influence in question."†

*We refer to our critic's statement that "everywhere the prevailing medical constitution of the times" is asthenic and to his observations in the following note. See April No. of this Journal, 1859, p. 409.

"During a sojourn of some weeks at the Virginia Springs during the past summer, we conversed with physicians from different portions of the country in regard to bleeding in inflammatory diseases, and especially in pneumonia, and did not meet with one who had not been obliged to discard the lancet altogether in the vast majority of cases, or to use it very sparingly in those instances admitting of its employment at all. Even among those living in the mountains, such was the experience of all with whom we had any conversation. There never was a greater change in the therapeutics of inflammatory affections than the past few years have evinced.

†N. C. Medical Journal, March, 1860, p. 242.

5. We differ radically with Dr. Wood in regard to his views concerning the properties and employment of quinine. In the first place, we strenuously object to the advice given by that author of waiting for "a *decided remission.*" The practice of postponing the use of quinine until a "*decided remission*" occurs, we need hardly say at this day to the southern physician is a hazardous and unnecessary delay. It is very natural however, that Dr. Wood should inculcate such a procrastination, it being the necessary consequence of his views in regard to "the *stimulant action of quinia,*" incidentally mentioned in this chapter, but more fully in another work,* in which he teaches that the sedative effects of a large single dose, are merely the ordinary result of *over stimulation,*" and that it is altogether *supererogatory to imagine* the existence of a *directly depressing power* in the medicine." Nor can our critic dissent from these objections to the views of Dr. Wood on the most important part of the subject, for he himself has declared in the most emphatic manner that they are erroneous and obsolete. We have only space to refer to the following remarks of our critic on this head: "It is very true, that for a long time very *erroneous ideas* were generally entertained in respect to the use of quinine in fevers and inflammations under the belief that if either of these states were well marked, it was contraindicated and calculated to do no inconsiderable mischief; but these *therapeutical dicta* were already rapidly passing away when we first entered upon

*These are Dr. Wood's views as enunciated at length is his "Treatise on Therapeutics and Pharmacology." He adds, "the stimulation of an organ first excites its function; if it be continued and increased, the function becomes disturbed and irregular; if still further increased, the organ is overwhelmed by the conjestion induced and its function is impaired or suppressed, the first excitement is thus followed by depression, through another physiological law which determines that the excitability of a part is exhausted by over exercise. Thus after the first excitant effects of quinine above referred to, have continued a short time, the cerebral centres become incapacitated for their duties through their congestion and secondary exhaustion." Vol. i, 243.

our medical studies and we were not educated under the *thraldom* of *such opinions*. In the first work on the Practice of Medicine that we read, the doctrine is taught that quinine is a *sedative;* and that when we are desirous of making an impression at all decided, in allaying the febrile disturbance of the functions generally, five grains repeated at intervals of two hours is the smallest dose which we should think of prescribing for an adult. And in that work it may be seen that Bailly himself took a hundred grains of the sulphate of quinine in five days for a slight febrile disorder when he was in Rome (1822) without being able to detect any irritation after an attentive analysis of his own feelings, which this quantity of medicine, says he would certainly have produced *if it* had been of an irritating or stimulating nature."*

It has been a source of regret to us for many years, that a teacher occupying the influential position of Dr. Wood, should have continued to teach such erroneous doctrines and especially as a large portion of his readers and audiences were southern men. Many a patient have we known to be lost whilst the attendant was "waiting for a remission." If a remission is desired, there is no means known so certain to produce it, as quinine, and we can never wait with entire safety for the occurrence of another paroxysm for as M. Maillot truly observes, "Il est empossible aussi de dire au début d'une fièvre intermittente, si elle sera au non perniciuse. Another day should never dawn upon a patient laboring under any form of malarial disease, unprotected by quinine, from the perils of the approaching paroxysm.

Our critic continues; "We have seen already, that the philosophic and lamented Drake has noticed this modification of pneumonia in that great work which he bequeathed as a dying legacy to the profession he so loved and adorned.

*Dr. Howard's Review, N. C. Med. Journal, March, 1860, p. 250.

Our reviewer also endorses, in extravagant terms of approval, the work of Briquet, whose whole work proves quinine to be a sedative. See same No. Journal, p. 271.

It will not be expected that we should introduce here the entire section he devotes to its consideration; but we must make space for his portraiture of the prominent features of the disease.

Drake's description of *Bilious Pneumonitis*—

'In reaching a diagnosis of this malady, it is not necessary to travel through the symptomatology of either autumnal fever or pneumonic inflammation, but simply to refer to some modifications of both.

1. The signs of an intense phlogistic action are less conspicuous than in ordinary pneumonitis. The functional disturbance of the lungs may be quite as great as in the most acute inflammation, but it results largely from sanguineous engorgement, and retarded transmission of blood through the organ.

2. The fever, instead of the continued type of the pulmonary phlegmasia occurring in those who have not received a malarial or autumnal fever impress, is subject to remissions, even when most intense, while in numerous instances, it displays perfect quotidian and sometimes tertian intermissions. The pulmonary affection follows the same law, when it consists in well developed inflammation, that condition does not, it is true, cease with the periodical abatement or cessation of the fever, but is greatly moderated to undergo revival with the fever; but when the inflammation is less intense, and the pulmonary lesion consists chiefly in passive congestion, it may so far disappear in the more or less perfect apyrexia, that the term intermittent becomes almost as applicable to the local as the constitutional affection.

3. Such is the derangement of the biliary function in autumnal fever, whether the attack be original or occurring as a relapse, that in a large proportion of the cases now in our contemplation, bilious symptoms are decidedly present. In some the secretion of healthy bile is excessive; the fur on the tongue assumes a dirty yellowish tint, there is a bitter taste in the secretions of the mouth, vomiting and purging of bile occur, and now and then eructations of that fluid. Its presence is also manifested in the urine, the serum of the drawn blood, the white of the eyes, the skin, and as I believe, but not on conclusive evidence, in the sputa from the bronchial tubes. In other cases the signs of a bilious deterioration of the blood are present, but there is no excretion of bile from the liver, which seems torpid, and by not pouring its bitter and alkaline fluid into the bowels permits the occurrence of an exhausting diarrhœa, the discharges being watery, and so acrid as to excoriate the sphincter. * * * Some of the most dangerous cases are the least inflammatory and most intermittent, presenting, in their phenomena and mode of termination, a great resemblance to malignant intermittents. Those in which the fever most affects a continuous type and the pulmonary affection is the most

decidedly inflammatory, are in general the least dangerous, because most amenable to treatment.'

'The reader will be amply repaid by perusing the whole section from which we have made the above extract; but enough has been quoted to show, in the clearest manner, that the able author fully appreciated the malarial complications of pneumonia, and the modifications thus impressed upon it; and that his notice of the subject cannot be justly deemed either "cursory" or very 'imperfect'"

We are sure that no one but our critic, whose boldness would be considered heroic, if displayed in a worthier cause, would ever have termed the above mere outline a *comprehensive or perfect* account of one of the most important endemics of the Southern States, especially after having assumed positions diametrically opposed to the description here so warmly applauded. Let us examine it a moment. The reader at once will perceive that Dr. Drake has scarcely attempted a description of the disease, indeed he almost waives it, and refers the reader to his chapters on pneumonia and autumnal fever, in order that he may form for himself a proper conception of the malady; which we need only say would be no easy task. Nor would it be possible to do so according to Dr. Drake's own showing as a few words will suffice to prove. According to this author's views, "*the pulmonary* lesion" in the *malarial disease* "often consists chiefly in *passive congestion*" "the *most dangerous* cases being the *least inflammatory.*" Now as this condition is altogether different from that existing in simple pneumonia, in which the *pulmonary lesion* consist in *acute inflammation* and in which the *most dangerous cases* are the *most inflammatory*, "a diagnosis of the malarial form could not be "reached" to use his own phrase, even were we "to travel through the symptomatology of autumnal fever and pulmonic *inflammation.*"

2. The author states that in the malarial disease "the

signs of an intense phlogistic action are less conspicuous than in ordinary pneumonitis and that although the functional disturbance of the lungs may be quite as great *as* in the most acute inflammation, this results largely from *sanguineous engorgement* and *retarded transmission of blood* through the organ." Whilst we agree with the author in every point in this paragraph, yet the reader will agree with us that in order to form a correct history of the disease it would be necessary that he should have informed us in what these "signs" consisted. We should have been enlightened in regard to the character and conditions of the pulse, the state of the nervous system and the calorifacient function. Yet these are not even attempted. In these important respects the reader will at once perceive, that the views of the author however correct as far as they go, yet are so very briefly and rapidly stated, as to render them necessarily "cursory and imperfect." But that our critic should have quoted this paragraph (2) with approbation is "passing strange" for the ostensible object of his whole review, is to prove, the very reverse of the views it contains. According to Dr. Drake, "the functional disturbance of the lungs" in the malarial disease "results largely from sanguineous engorgement and retarded transmission of blood through the organ;" whilst agreeably to our critic, the condition of the lung is that of acute inflammation or to use his own words, is "*ordinary* pneumonia;" "*true* pneumonia," complicated by the impression of a malarial law."

3. Whilst we entirely agree with Dr. Drake, that "the fever in the malarial disease, instead of the continued type of the pulmonary phlegmasia, occurring in those who have not received an autumnal fever impress, is subject to *remissions*" yet we do not concur with him that it is always so. The remissions as we have stated are sometimes "obscure" especially when the fever is "intense." This is the case as the reader is well aware in ordinary remittent fever; the phrase "waiting for a remission" originated from the

fact. Indeed the continued type of malarial fever is noticed by ancient as well as modern writers.*

We are surprised that our critic should have quoted this paragraph, as we have already seen him contending, that "in Simple Pneumonia the fever is often *decidedly remittent* and *paroxysmal*" in direct antagonism to the declaration of Drake therein, that "the fever of the *pulmonary phlegmasia* occurring in those who have *not* received a malarial impress is of a *continued* type."

3. In relation to the frequent occurrence of some of the bilious symptoms, and especially the bilious vomiting, in the malarial disease, our experience coincides with that of Drake; but as we have said before, the symptoms of icterus are rarely seen save at an advanced period or at the close of the disease. Dr. Drake indeed admits, that "the phrase Bilious Pneumonitis does not always indicate a disease attended with bilious symptoms," and that "so far its employment involves a solecism," but we do not think they are so "decidedly present" in a large proportion of cases as he states.

Our critic again forgets himself, either in quoting, or praising the remainder of this paragraph (3) which contains as we have seen, statements in accordance with our own but warmly contested by him. According to Drake *diarrhœa* is a very frequent symptom induced by the malarial impress on the disease, occurring both when "the secretion of healthy bile is excessive" and also "when there is no excretion of bile from the liver," yet we have seen that our critic has most dogmatically declared that "there is no reason *known to him*, why a *malarial influence* should necessarily *impart* to *pneumonia* unwonted *irritability* of the *bowels*

* Celsus De Medecina, Ed. Rotteradame, 1750, 117.
Galen (Darenburg's French translation,) ii. 715.
Sydenham (Rush's ed.) Phila. 1809, p. 205:
Boerhave, Van Swieten's comment, ed. cit. 7, 174.
Montgellaz, ii. 18, who quotes Avicenna and Sennertius Torti Morton Senac Trnka and Maillot thereon.

or engraft upon it a state of phlogosis of the intestinal mucous membrane, and that to *assume* that the *state of the bowels* is owing to the *action* of *that element* in the *absence* of any *demonstrable proof* of its existence is simply to *beg the question.*"

It is thus seen from these extracts, which are really all that Drake has in relation to its symptoms and diagnosis that our critic not only has here approved opinions concerning the pathology of the disease, which in another place he has entirely condemned, but that he also differs with Drake in essential points in relation to its symptoms and diagnosis. Yet he concludes by endorsing the description without reservation and declares that the able author fully appreciated the malarial complication of pneumonia and that his notice of the subject cannot be *justly* deemed either "cursory" or very imperfect." We cannot close our examination of the chapter of Drake without admitting that as a whole it is by far the best contained in any "standard authority." As such we shall hereafter quote it, finding in it, as we shall, the strongest support for some of our views and which are in direct conflict with those held by our reviewer. We have now examined the sketches of this disease, as given by Eberle, Wood and Drake. As the reader has perceived they are brief notices, occupying but a few lines, in which the prominent symptoms are only recounted, as is usual in works on general practice. Not one of them contains an analysis of the symptoms, an account of its various grades, or of its character, when attacking different ages or sexes, nor a single exhibit of the appearances after death, the importance of which is so strongly insisted upon by our reviewer.

Surely then from these considerations as well as from those which we have shown whilst examining each individually we can say without disparagement or *injustice* that as histories of disease they are both "cursory and imperfect."

To conclude the examination of the "*modern standard*

authorities," whom our reviewer holds, have lucidly and comprehensibly delineated the subject of Bilious or Malarial Pneumonia we finally arrive at the account of M. Grisolle.*

The celebrated monograph of M. Grisolle since its first appearance, has been considered the most complete treatise ever published on the subject of pneumonia in general. The work occupies 747 pages 8 vo. and is evidently the result of vast labor and extensive research. The first eight chapters, embracing 397 pages, are mainly devoted to the investigation of the Simple or Frank form, exhibiting the disease as it occurs in subjects of different ages, and in its relations with other acute and chronic diseases. With the ninth chapter the author proceeds to notice the varieties of the affection under the title of "*Farmes de la Pneumonie,*" devoting a separate section to the consideration of each. Finally, we may remark that the work has never been rendered into our language, and that its only edition which was published in Paris, 20 years ago (1841) has long been exhausted. With this explanatory preface we proceed to the discussion of this author's views of the subject of this controversy, by quoting the introductory remarks and comments of our reviewer, and by copying the description of the disease as given by the latter himself:

Dr. Howard proceeds:—"Lastly, we must introduce the greatest of all "*modern standard authorities*" on the subject of pneumonia. In his great work, *so often referred to in this paper, M. Grisolle* has given under the caption, *pneumonie intermittente et remittente,* nine pages to the elucidation of the *disease in question.* He alludes to various authors both ancient and modern, who have written on the connection of pneumonia with periodic fever; and notices the affection as appearing under the two divisions just mentioned.

Grisolle's account of *Intermittent Pneumonia.*"—

*Traité pratique de la Pneumonie, aux différens ages par A. Grisolle D. M. P. Paris, 1841.

1. "As is the case with most unpleasant complications, pneumonia is sometimes only developed *after* one or several paroxysms of simple, benign intermittent fever; but this is quite rare. In the greatest number of cases, there are to be seen from the first, some thoracic symptoms, and especially a pleuritic pain, which should fix the attention; but the disease is not entirely characterized until during the succeeding exacerbations. At other times the pneumonia commences as though it were simple, and it is only as it progresses that the specific cause, which produces it, or complicates it, can be recognized.

"The disease commences with a chill, which is more or less violent, during which the patient complains of pain of the side; soon there is cough and bloody expectoration, and the examination of the chest reveals fine crepitation; finally, after a variable length of time, the fever declines, the thoracic signs diminish in the same proportion, and last of all there is abundant diaphoresis. The intermission may be complete, that is to say, the fever, together with the greater part of the local symptom ceases; this is generally the case after the first or second paroxysm. At other times, during the intermission, some symptoms such as slight cough, a feeling of oppression or dull pain, a small amount of crepitation or dullness, continues to exist. In general the fever is of quotidian or tertian type; in the majority of cases, after a remission of *twelve or twenty-four hours*, a new paroxysm, longer and more severe than the first, appears and as the paroxysms increase in frequency, so do the intermissions become shorter and less complete.

"The local symptoms of pneumonia may disappear during the intermission, and reappear with the succeeding paroxysm; but in these cases the disease had hardly passed the first stage; crepitation was the only sign furnished by auscultation; but it is almost certain that if the paroxysms come on for several days in succession, the pneumonia passing from the first to the second stage, would make continued progress, and only manifest an exacerbation at the hours at which the febrile intermittent paroxysms had previously appeared. It is a fact, moreover, rare and purely exceptional, that pneumonia even at the first stage, *can completely disappear at the termination of the paroxysm;* that cessation of inflammation which is observed in some membranous tissues, seems far more difficult in the case of parenchymatous organs and especially of the lungs. Thus, then, when the first stage is well established, when the crepitant rale exists, the pulmonary lesion cannot be resolved in the few instants during which the *apyrexia lasts;* but it persists, it *even makes progress*, and becomes of *itself* the exciting cause of *a* continuous febrile movement.

"In consulting the report of periodical pneumonias contained in the annals of science, we will be convinced that the febrile exacerbations are almost *never* separated by a complete *intermission*; there exists on the

contrary a continued febrile movement in part symptomatic of the visceral inflammation, which augments at the time when the periodic exacerbations are renewed; pneumonia is then said to be *remittent*.

2. "*Remittent* pneumonia is rather a *rare* affection, and is hardly ever seen *except* in *marshy districts* of country and under the influence of causes which ordinarily produce *ague and fever*; it can then be observed as *an epidemic*. In general, the disease commences with the ordinary symptoms of open frank pneumonia. The patients have a violent chill, soon followed by burning heat, cephalalgia, and a pain more or less severe in one of the sides of the chest. These symptoms are accompanied at the same time by oppression, dyspnœa, and cough; the expectorated matter exhibits often during the first hours a yellowish or rusty tint, and the examination of the chest by auscultation and percussion, permits us to discover and *circumscribe* the pneumonia. The febrile movement once established, continues without interruption, but it undergoes from time to time, at variable but regular intervals, *exacerbations* and *remissions*.

"The exacerbations are generally announced by *slight shiverings*, which are generally *partial*, and which are altogether *absent* in a *great many cases*. Soon, the general and local symptoms increase in intensity; the pulse becomes more frequent, the heat of skin increases, the countenance becomes injected, respiration is accelerated and more painful; anxiety, dyspnœa, and pain of the side augment; there is at the same time a great deal of agitation, and it is not rare to see delirium now supervene. *The chest has rarely been explored during the existence of these phenomena;* but it is evident that, at this period, very active disease is going on in the lungs, M. Grifoulière, for example, has assured himself that, in these cases, a considerable portion of the lung has become completely hepatized in the course of *ten or twelve hours*. The exacerbations can be of a much graver character, and then be accompanied by a series of symptoms which give to the disease a pernicious form. In these cases, the countenance of the patient is profoundly altered, indicating stupor, there is great prostration; the pulse is filiform, compressible and sometimes irregular, and is very frequent, or on the contrary it may be slower than usual. After having persisted during several hours with great intensity, these grave symptoms decline progressingly or all at once. At the same time, the pain of the side and oppression in breathing diminish, the pulse loses its frequency, the powers of the system increase, and we have diaphoresis which is more or less profuse. If, during the remission, the local and general symptoms are seen to diminish in intensity, it is quite rare that *one* or *two* of them ceases entirely. Besides, auscultation and percussion have proved that the pulmonary engorgement does not undergo any change during the period of remission.

"Soon a new exacerbation declares itself, and the symptoms become more and more grave in proportion to the frequency of their recurrence.

But, one circumstance in these cases merits attention; it is that in exploring the chest attentively, we do not see the pulmonary change making proportional progress. M. Grifoulière observed that the hepatization, which he discovered within the first ten or twelve hours of the disease, remained afterwards stationary, and did not invade a greater extent of lung after three or four paroxysms. The periodical exacerbations are sometimes established from the very commencement of the inflammation; at other times the latter seems to exist without any perceptible exacerbation for several days, and it is not until towards the fourth day, sometimes later, as the sixth, seventh, or eighth, that regular exacerbations begin to be remarked, as if a new element had come to join itself to the primitive affection. The *time* at which the exacerbations come on, varies, but is regular; in the majority of cases they are quotidian; as was noticed particularly in the epidemics of Mayence and in the canton of Aubin: they are much more rarely double quotidian, or tertian, and I believe they have never appeared in the form of a quartan. The hours at which the exacerbations occur are not constant; J. P. Frank observed them generally during the course of the day, the remission taking place in the evening or night; whilst in the epidemic in Aubin, M. Grifoulière remarked that the exacerbations occurred once in 24 hours. and almost always during the evening or night.

"If the disease is to terminate fatally, the intermissions are less and less evident, and the phenomena which mark the exacerbations are more and more dangerous; finally, death ensues. In the epidemic in Aubin, if left to itself, the disease terminated fatally from the third to the sixth exacerbations, in the worst cases: and in the others a little later, or from the eighth to the tenth day. Death may take place by the extension of the pneumonia; at other times the patient dies during an attack of delirium, chill or coma. If on the contrary, the disease terminates in recovery, the exacerbations diminish in intensity and frequency, at the same time that the local symptoms improve." (*a*)

"Such is the career of pneumonia when complicated by the impression of a malarial law, as described by Grisolle, *condensed* and *ararnged* from the article referred to in his great work. How beautifully clear and simple is his delineation of the leading phenomena that signalize the action and dominant influence of malarial poison—how faithful is the portraiture of the most prominent and distinctive features which the accidental infusion of this special element

(*a*) Op. Cit. 427–434.

impresses upon the march of pneumonia? Let the reader compare it with the sketch which *Dr. Manson* has presented of the symptoms that mark the general course and progress of this complicated disease. Will the *French* author suffer by the comparison? Is *his* description of the affection '*sadly deficient for us?*' "

In addition to the above at the close of our critic's "Review," he imparts the important and interesting information to the public, contained in the following note: "We must here return our thanks to our kind friend, Dr. J. T. Chunn, of Baltimore, for having furnished us a translation of Grisolle's account of Intermittent and Remittent Pneumonia (see April No. of this Journal, p. 430) and also for a translation of Chomel's views respecting the crepitant rhonchus (see June No. 532.) As accuracy was required we preferred not to trust to our imperfect knowledge of the French tongue."

We have here presented the "great success" of the "French Author," with the prologue and epilogue of our critic whom we lastly behold appearing before the curtain and gracefully "returning thanks" to the kind friends who have contributed to his triumph.

Were our critic our "dearest foe" on earth we should wish for no better advantage than he has furnished us, by thus extravagantly endorsing M. Grisolle's account of "Intermittent and Remittent Pneumonia," as being not only either cursory or imperfect, but as "a faithful portraiture of the disease in question." Before proceeding further, let us first enquire, what is the disease in question? Why of course Bilious or Malarial Pneumonia, but which, however, our critic informs us, "M. Grisolle has given under the caption "*Pneumonie intermittente et remittente.*" Well so far we understand each other. Now in order that we may fairly appreciate the correctness of M. Grisolle's account of Bilious or Malarial Pneumonia, "under the caption *pneumonie intermittente et remittente*," let us in the first place

compare Grisolle's account of the bilious symptoms, with those enumerated by Eberle, Wood and Drake; and lest we might give offence by omitting them let us also collect together from this Review, those given by our critic himself. We will display them in opposite columns in order that the reader may perceive at a glance the striking resemblance between all of these 'faithful portraitures" of the disease in question.

The American author's account of the Bilious symptoms "in the disease in question."	The French author's account of the Bilious symptoms of the disease in question.
EBERLE.	GRISOLLE.
"A sense of fullness and tension in the right hypochondrium—*Skin* from the *beginning* more or less *tinged* with *bile*, the *conjunctiva* especially often conspicuously *icterode*—face flushed and sickly mixture of red and *yellow* betrays the existence of a disturbed state of the *liver* (Potter.)* Sputa of a frothy *yellowish* appearance, *vomiting* very common and more or less *bilious* matter thrown up—*tongue* with a *yellowish* streak along the middle. *Urine* always of a deep *yellow* or *bilious* color.	
WOOD.	
"Yellow or yellowish white fur on the tongue, nausea and *vomiting* sometimes of *bile*—a more or less *yellowish* tinge of the *skin* and *conjunctiva brownish color* of the *face* arising from the mixture of the pneumonic redness with the *icterode* hue." *Urine* deep colored, *yellowish* brown."	
DRAKE.	
"Such is the derangement of the *biliary* function that *bilious* symptoms are *decidedly present* in a *large proportion* of cases. In some the secretion of *bile* is *excessive*—the fur	

*The reader will notice that Eberlee quotes Potter's description of Bilious Pneumonia.

on the tongue assumes a dirty *yellowish* tint—there is a *little* taste in the secretions of the *mouth—vomiting* and *purging* of *bile* occur, and now and then *eructations* of *that fluid. Its presence* is also manifested in the *urine*—the *serum* of the drawn *blood* and as I believe but not on conclusive evidence in the *sputa* from the *bronchial tubes, etc.*"

DR. HOWARD.

"Bilious vomiting and other evidences of hepatic trouble much oftener present themselves in pneumonia offering positive proofs of the mingling of a malarious element, than when no such proofs are present; and consequently when taken in connection with other phenomena should arrest attention as among the *corroborative* tokens of that *special influence.*"

"For the *most* part there are marked tokens of biliary disturbance and every leading peculiarity reflects the impress of the periodic fever element."

"In simple and malarial pneumonia alike nausea and vomiting of bilious matters may occur, but they are much oftener present and much more prominent in the malarial form."

"Bilious vomiting occurs in the mass of cases attended by abiding nausea, painful sense of fullness and some tenderness upon pressure over the right hypochondrium. The tongue is stained with yellow or greenish yellow, the eyes and skin are tinged with yellow in a certain number of cases and the face then, as Potter† aptly remarks, presents a sickly mixture of yellow and red.

"The urine is frequently of a deep yellow or dark brown color from the presence of bile and the serum discharged from blisters may be yellow from the biliary impregnation of the system."

"The Tragedy of Hamlet in which the character of the Prince of Denmark is omitted by particular request!"

†The reader will also please observe that our reviewer quotes Potter.

Not one bilious symptom! not a single evidence of hepatic disorder!—a bilious disease minus bile! Indeed without a symptom of a malarial disease which our critic admits to be certainly diagnostic of "pneumonia complicated by the impression of a malarial law." It is true, that Grisolle mentions that the *fever is remittent and paroxysmal*, but we have also seen that our critic contends, that the fever may be "decidedly remittent or paroxysmal" in cases in which there is no malarious complication, and that not unfrequently. It is true that Grisolle mentions headache as occurring in the exacerbations, but we have seen that our critic asserts, that "Headache is common alike to simple and malarial pneumonia." It is true that he also mentions delirium at the acme of the paroxysms, but our critic has as positively declared that he "*cannot* admit, that delirium either by the *frequency* of its occurrence, the *time* at which it appears, or by its *character* offers *any special indication* of pneumonia imbued by the poison of *malaria;*" yet in despite of all this, our critic enthusiastically cries: Make way for the greatest of all modern standard authorities! how beautifully clear and simple is his delineation of the leading phenomena, that signalize the dominant influence of malarial poison! Behold! how faithful is the portraiture of the most prominent and distinctive features which the accidental infusion of this special element impresses upon the march of pneumonia!" But hold! let us not be too rapidly hurried away by the rhapsodies of our critic—he has too often, as we have seen, thought proper to modify his opinions, that we should not be somewhat distrustful of following him too implicitly. We have said that he had indulged himself in a resumé in the latter part of his paper, the evident object of which was to correct the errors in the first, and *lo!* here in the *review reconsidered*, we find him turning up again on this point, and holding the following modified and subdued language:

"*Nausea bilious vomiting and an icteroid tinge of the tongue, eyes, skin and*

"*urine*; These phenomena are certainly very conspicuous in a *certain* "*number* of cases connected with the diathesis of periodic fever, but they "are absent in many cases as they occur in this latitude at least, obvi- "ously impressed by a malarious influence. *They are not mentioned by* "*Grisolle*, whose description of Intermittent and Remittent Pneumonia in "*most respects* so excellent, is drawn from the writings of many authors, "both ancient and modern scattered through the annals of science."

Of all the blunders ever committed by a critic, who set out on a crusade against the errors of others, this declaration, that these bilious symptoms are not mentioned by Grisolle, is the most glaring and egregious. Will not the reader be astonished, when we inform him that in this identical work of M. Grisolle, yea in this self-same chapter from which Dr. Chunn has translated the "account of Intermittent and Remittent Pneumonia, for his friend Dr. Howard, that there is to be found a whole section, devoted to "Bilious Pneumonia" (Pneumonie bilieuse) in which *all* of these symptoms *are* mentioned over and over again. In fact it is the very first disease which Grisolle considers under the head of "*Forms of Pneumonia*," but which our critic who "has so often referred to the work," albeit distrustful of his French, as well as his friend Dr. Chunn who reads French so well, have entirely ignored. To prove this and for another purpose, which the reader will perceive, we translate the following from the work itself.

FORMS OF PRIMITIVE PNEUMONIA.

§ 1.—BILIOUS PNEUMONIA.

There is a variety of pneumonia in which the symptoms of the pulmonary phlegmasia, coexist with the group of symptoms, known under the name of the *bilious* or *gastric state*; excellently described by Stoll and which may be profitably recalled here. The face is yellowish or of a pale green—the headache is of a dull character and a similar pain is felt in the cardice region. There is little or no thirst, the patient experiences a *bitter* taste in the mouth, some-

times nauseous or acid. The tongue at first white is soon usually covered with a *yellowish* fur, the teeth are encrusted, the epigastrium is apparently swollen and is the seat of a sensation of fullness. Some patients vomit spontaneously *bilious* matters, whilst others merely suffer from nausea—there is an abundant flow of saliva, a loathing of all species of aliment and finally there is constipation, or occasional *bilious* stools,

The commencement of bilious pneumonia, was sudden and attacked the individuals in perfect health, in 8 cases. In two, there were some precursory symptoms, and in one of them a slight bronchitis and gastric disorder preceded the attack. With the exception of this patient, in whom bilious symptoms preceded the pneumonia for several days, of the remaining cases the symptoms referable to the digestive organs, declared themselves simultaneously with the pneumonia in two patients, and in the second, third, fourth or fifth day in six cases, that is to say in the majority of them.

In regard to the general symptoms, I have observed, that with the exception of one case, the pulse was soft, feeble, compressible, and bore no relation to the intensity of the disease or the apparent strength of the patient. In the majority of cases also, the heat of the skin was intense, dry and sometimes frequent; finally in one third of the cases, there was observed a depression of spirits and prostration of strength disproportionate to the extent or intensity of the pulmonary lesion. The cephalalgia which was always limited to the forehead, was dull, and persisted longer than in the ordinary phlegmasia. To these symptoms were always united, a series of phenomena, indicating disorder of the digestive organs; thus all the patients experienced a bitter taste; the tongue in two-thirds of the cases was covered with a thick yellowish coat and whitish in the others; in all, nausea was present with a desire to vomit, and in almost two-thirds of the patients, slight vomiting occurred once or more times or simple regurgitation of bitter and

acrid matters which was always followed by relief. The thirst varied in degree, and seemed rather in proportion to the intensity of the febrile movement, than referable to the condition of the stomach. In three patients the epigastrium was the seat of pain, which was increased by pressure, and only yielded to the employment of evacuants. In three-fourths of the cases, constipation existed, in the remainder, there were some small liquid stools, which were usually discharged without pain. Finally, in one third of the cases, the skin was sallow, or of a yellowish hue, and the countenance was expressive of suffering. In the remaining cases, the face presented a natural appearance, not unlike that which it presents in frank pneumonia.

Influence of age. Bilious pneumonia is principally observed in young persons, or in the adult. Although recent authors, who have studied pneumonia in the aged and in infants, have not noticed the bilious form of the disease, it however appears from the researches of N. Potter,* professor in the University of Maryland,[1] and of *Dr. Garvin*,[2] that it may be observed at both of the extremes of life; but these authors have observed that it occurs more rarely at those periods.

Climates, countries, seasons. * * * According to the researches of Doctor N. Potter, bilious pneumonia frequently occurs in several of the United States and particularly in those, where independently of the deleterious influence of malaria there are also observed sudden variations of temperature, circumstances which impart intensity and gravity to the disease. On this account in the middle states, the disease is intensely developed, whereas, in the eastern states, the disease is less strongly marked. It is worthy of remark, that according to Doctor Potter, bilious pneumonia has become very common in places where it was

* This is the same author referred to by Eberle and Dr. Howard in their account of the bilious symptoms in the malarial disease.

[1] Baltimore Med. and Surg. Journal and Review, Jan. 1834.

[2] Southern Med. and Surg. Journal, of 1837, (Augusta, Ga.)

previously unknown. Thus in the state of New-Jersey and on the river Delaware,* it has become more common within the past twenty or thirty years, the same may be said of the region of the Potomac and the old settlements of the south, where it is now very frequently observed and assumes the typhoid form. It is also prevalent in the southwestern states.

According to Dr. Garvin, bilious pneumonia principally attacks those persons, who have experienced attacks of autumnal intermittent fever. In the opinion of the same author, those persons who have been exposed to malaria, though they may have escaped intermittent fever, are more subject to the disease, than those who have resided in healthy localities."

Here the reader has presented in *extenso* all the bilious symptoms mentioned by Eberle, Wood, Drake and our reviewer, as pertaining to the malarial disease, and yet the latter declares, that the bilious symptoms are not mentioned by Grisolle. The reader will at once perceive that the reason which has led our reviewer to make this declaration is, that his friend "Dr. J. T. Chunn of Baltimore," having been sent on a search for the bilious disease by his friend Dr. Howard, and being as ignorant of the disease, as his friend Dr. Howard was of the French tongue, *has translated the wrong section*, whilst our reviewer, like a great many others as determined in praising all that is foreign as he is to "disable the benefits of his own country" has gone into ecstacies over an author of whom he possessed only second-hand information. But the reader will perceive more than this. Without any thread being given him by us, to guide him out of this labyrinth; without any illumination from us, to dispel this "confusion worse than confounded," he will perceive at a glance, that M. Grisolle, not having any

*Grisolle has it, "*l'etat de Persey* and *les rives de la Ware.*"—literally—the state of Persey and the rivers of the Ware—the French author knew as little of the geography of our country as we shall soon see he knew of our diseases.

personal knowledge of the malarial disease and having derived all his information as he himself declares* from the accounts of others has divided a disease which is essentially *unique* into two separate and distinct diseases. Having collected his materials for his section on Intermittent and Remittent Pneumonia, from the French treatises on *Pernicious fevers*, in which *bilious symptoms* are given *no* especial *prominence*, he has been led to *omit* them *altogether*, and having gathered the materials of his *Bilious Pneumonia* from *Stoll*† and the *American authors* who dwell particularly on the *Bilious symptoms*, he has not noticed its *periodical character*. We have not seen the paper of Potter on Bilious Pneumonia, but the reader has perceived that Eberle and our reviewer himself have quoted him as an authority on the bilio-periodical disease—whilst Grisolle cites him in his section on Bilious Pneumonia, in which the periodical type is unnoticed; nor have we been able to obtain the paper of Dr. Garvin of Georgia, which we have seen quoted by Grisolle in the same section, but if their accounts do not mention the periodical character of the disease, they are worthless and untrue to nature. Said we not aright then reader, that the works of foreign authors on this subject are "sadly deficient for us," when we behold M. Grisolle, whom our critic declares stands *pre-eminent* among those who have *studied* and *elucidated* the subject of *pneumonia*" so mutilating this form of the disease, as to render it unrecognizable to the student, and who has so disarranged

*C'est à l'aide de ces divers faits—i. e. les observations de pneumonies périodiques contenues dans lesannales de la science—que je vais essayer de décrire la maladie (p. 431,) and again in his observations on the treatment of the disease he says with diffidence—N'ayant recucilli aucune serie de faits de pneumonies intermittentes, je devrais peut-être m'abstemir de donner ici une opinion. (p. 727.)

†*Ratio; Medendi* paro prima. Parisiis, 1787, p. 6.

As Pinel, Andral and Chomel all assert the disease described by Stoll indicated Catarrh with gastric disorder rather than pneumonia. However, it is evident from his description that some of these catarrhal cases terminated in pneumonia.

the *disjecta membra*, that our critic as well as his translator have mistaken the section which treated of the American disease.

But we have not done with our critic or the work of M. Grisolle. However correct Dr. Chunn's abridged translation may be, so far as it goes, yet there is an important paragraph contained in M. Grisolle's account of Intermittent and remittent pneumonia, which doubtless has been accidentally omitted or at least unnoticed, and which if admitted to be true, destroys the whole foundation upon which the review of our critic is based, and which sustains the most important position taken in our essay. After analysing the accounts of this form of pneumonia as given by Morton, Frank, Alibert, Maillot and others, Mr. Grisolle thus clearly expresses himself. "It follows from the preceding, that pneumonia may be developed under the influence of the causes which produce intermittent fever, and in these cases the symptoms peculiar to the phlegmasia appear to be subordinate so to speak, to the febrile movement, as they follow its march, that is to say that they commence, increase and cease, or at least diminish simultaneously with it. *Pneumonia may then become one of the forms of pernicious fever.* Of all the pernicious intermittent fevers of which the characteristic symptoms are furnished by the thoracic organs, peripneumonic fevers appear to be the most frequent," and again, "It is certain, that according to the case reported by M. Maillot, that the local symptoms of pneumonia, may disappear during apyrexia, and reappear in the next paroxysm; but in this case the disease has not passed the first degree."

Here the reader will perceive that M. Grisolle admits facts, and eunciates views, which fully coincide with our own concerning the pathology of the disease, viz; that Malarial pneumonia instead of being "ordinary pneumonia complicated by the impression of a malarial law," according to Dr. Howard, or a combination of two distinct and independent diseases, according to the pathology contended for

by La Roche, may be a form of malarial fever, the lesion of the lung, being merely one of its local determinations, developed under the influence of the cause which produced the fever, and with its like all the other local symptoms, arising, increasing and ceasing with it. This we believe, and as we shall hereafter endeavor to prove, is the true pathology of our Southern form of pneumonia, a pathology which as we have seen our critic vehemently contests and which the voluminous essay of La Roche was written to refute.

Whatever views, however, may be entertained in regard to its pathology, we have written enough to prove that this section of M. Grisolle, cannot be considered as an exception to the declaration we have made, that this disease has been "only cursorily and imperfectly noticed by any of the modern standard authorities." Let us not however be supposed as desiring to detract from the real merit of this writer. His Traité de la Pneumonie is a monument of laborious research of sound reasoning and rare discrimination. Had its author have had an opportunity of studying the malarial disease at the bedside he doubtless would have quickly observed its salient points and have rendered as correct and comprehensive representation of its phenomena as he has of those forms which he has observed. In this regard we cannot extol it too highly. May the day be not far distant when some son of our young confederacy may as fully and perfectly delineate the southern disease as its other forms have been portrayed by M. Grisolle.

SELECTIONS.

Military Surgery.

Material of Armies Recruiting, Clothing, Food, Encampments, etc.

The *soldier's coat* should be a frock fitting loosely, easy over the shoulders, with full play for the arms, without binding in any way, and wide in the body, so as not to impede the expansion of the chest when closely buttoned. The tail of a coat gives much protection to the body and abdomen from damp, whilst a jacket—which is a very poor costume for soldiers—exposes the entire body to drafts and dampness, fruitful causes of bowel complaints. The *trousers* should be of good, heavy wollen material, made also free, for the easy play of the limbs. *Flannel shirts*, coming well down upon the thighs, and drawers of the same material, are of great hygienic utility. In winter they retain the animal heat and support the healthy function of the skin, whilst in summer they absorb more readily the excess of perspiration, which occurs under severe exercise; and whilst agreeable to the wearer, they prevent sudden arrests of perspiration, and are thus a protection against diarrhœa and dysentery, which are so fatal to armies. These should be furnished in sufficient numbers to enable the soldier to change when he has been exposed to rain, as he may thus prevent pneumonias and bronchial affections, so common to camp life.

* * * *

Cleanliness.—Nothing contributes more to preserve health than personal cleanliness; and as the free use of soap is a

prophylactic as well as a civilizer, it should be regularly distributed to the men. Daily ablutions should never be omitted; and, if possible, the chest and arms, as well as the face and neck, should be well sponged. Baths should be used whenever opportunity permits. *Keeping the skin clean prevents fevers and bowel complaints in warm climates.* Baudens, in insisting upon cleanliness, says "that the contrast in the sickness and mortality of the English and French camp in the Crimea, can be in a measure attributed to the frequent ablutions of the English, who washed their clothes in hot water, and changing their underclothes twice a week. It is easy to understand how carelessness in this respect will impair the functions of the skin and induce disease. At review, our French soldiers show new clothes, and on the whole an unquestionable military equipment, yet these beautiful battalions leave in their passage a strong smell of barracks not to be mistaken."

It should be the duty of the medical officer to suggest to the commanding officer to insist that these hygienic regulations be rigidly enforced. He is not only the best, but also the most popular officer, who attends himself to the detailed comforts of his men.

* * * * * * *

Fresh meat and vegetables should be served out to troops whenever they can be had, and the best mode of cooking them is in soup. A French military proverb says that "soup makes the soldier." The free use of fresh vegetables is the only mode of preventing the appearance of scurvy among the troops. When these cannot be obtained, the free use of dried vegetables, as rice, potatoes, corn-meal, etc., will tend to sustain health and vigor. In the Crimea, where the temporary absence of fresh vegetables was a great and serious privation, lime juice, citric acid and sour-crout, were extensively used to prevent and stop scurvy.

Acid fruits are anti-scorbutic, and very good for soldiers. The English in the Crimea, gave out a ration of lemon juice three times a week, which, when mixed with rum

and sugar, made a very nice and healthy drink. This corrective protected, comparatively, the English soldiers from scurvy, whilst with the French it was widely epidemic and very fatal. Vinegar, when freely distributed, also assists in preventing this scourge among troops. Vinegar, molasses and water, when mixed in proper proportions, make a very refreshing and palatable drink, not unlike lemonade, and possessing similar anti-scorbutic properties to lemon juice. A distinguished military surgeon has remarked that 100,000 francs spent in fresh vegetables will save 500,000 francs from the expenses of sick soldiers entering the hospital, besides the use of the men for active service. Of the dried vegetables, rice is the best for feeding troops. It is easily carried, easily cooked, easily digested, and is the most wholesome of the farinaceous articles, correcting intestinal fluxes. Biscuits or hard bread, is a common article of diet in camp life, because it is easily preserved and transported. When eaten as dry biscuit, it acts like a sponge in the mouth, exhausting salivary secretion, and tiring the jaws, it produces surfeit. When possible, and rarely it is not convenient, soak it in tea, coffee or soup; it then makes a very nutritious meal. Even water, with a little salt, makes it much more palatable and nourishing. Fresh bread is always preferable when it can be obtained.

Bacon is, par excellence, the laborers' and soldiers' meat in America, and goes further, by weight, than any other. It never produces surfeit, is always acceptable, very easily cooked, and with its rich juice will make the dryest farinaceous diet savory. It has the very great advantage of keeping for any length of time, under any condition, which makes it far preferable to any other meat for troops.

* * * *

The following is the order which experience has proved to be most useful in the French service. A soldier should never commence a march without having partaken of a repast. A cup of hot coffee with bread soaked in it will

sustain a march of some duration. A little meat would be an improvement, which is always saved by the prudent soldier from the previous day's meal. For night marching, an alcoholic drink after the meal will enable him to undergo much more fatigue.

Preparatory to marching, the soldier fills his canteen with good water, or what is much more refreshing, weak coffee or tea. The start, especially in summer, should always be at the break of day. After marching three-fourths of an hour, the column stop for twenty minutes. In resuming the march, a halt is made for a few minutes in each hour. In crossing a ford, the men take off their pantaloons, keeping on their shoes. A sentinel guards any fresh-water spring which is met in the march, to prevent soldiers from gorging themselves—a very wise measure, which prevents much sickness.

Water should always be taken in reserve and with precaution. When taken in great quantities it weakens and fatigues the organs of digestion, increases perspiration and enervates the entire system. It is particularly injurious to drink rapidly and freely when heated from exercise, as sudden death is not very rare from this imprudence. The soldier should accustom himself, when thirsty, to drink slowly and in small mouthfuls, keeping the water in the mouth and throat as long as possible. The cravings of thirst are often produced by a parched condition of the lining membrane of the mouth; and by rinsing the mouth frequently, thirst can be allayed to such a degree that but little water will be required, whilst much, hurriedly drunk, will not satisfy the urgent call. In marching, thirst can, in a measure, be prevented by keeping the mouth closed, and in speaking as seldom as possible; otherwise, the dry air often loaded with dust, will parch the lining membrane of the mouth—a very distressing sensation when it cannot be relieved by drinking. When, during a march or halt, the fatigued and thirsty soldier finds water, instead of rushing to it at once, he should first try and repose himself

before drinking; then, having washed out his month several times, drink slowly so as to make the smallest possible quantity of water supply his necessities. Washing the face slackens thirst.

As good water is not always to be obtained on a march, a soldier should never lose an opportunity to fill his canteen with fresh water. If the canteens be covered with a light colored wollen cover, the water will keep cooler than in bright tin, which absorbs heat more rapidly, and extends it to the contents of the canteen. When troops have had an early start, they should bivouac about ten o'clock in the morning, and lie over for the heat of the day, as soldiers on march should, if possible, be protected from midday sun. Here they will have time to cook their midday meal, wash their clothes and refresh themselves from their fatigue. This meal consist of coffee and bread, with meat cooked and saved from the preceding day's repast. The want of this precaution, which old soldiers adopt, is severely felt by recruits. The experienced soldier never forgets to keep in reserve a certain proportion of meat or other food, against a deficient distribution or the want of time for properly preparing it. The meal should be taken in the shade, under some protection from the sun. A few branches properly arranged, will form a comfortable shelter. The main meal or meat, vegetables, etc., should be taken after the evening halt, at the end of the day's march. The officer in charge of the troops should always know the road over which he is to travel the next day, and when he is compelled to bivouac in places where the prospect for getting wood is bad, each soldier should carry on his knapsack a small quantity to cook his midday meal with.

In the evening halt, the site selected for the camp, when possible, should be on rising ground, free from low places, and in proximity with water and wood. These rules become of special importance in establishing a camp for even a few days stay. It is prudent to avoid the immediate vicinity of swamps and rivers; the emanations from such

are noxious, often pestilential, but fortunately do not extend to a great distance. Interposing a piece of rising ground or woods is, as a general rule, sufficient to turn or break currents from these low places, and protect from their hurtful influence. It would be preferable to camp in the direction of the regular wind currents, so that emanations may be wafted in the contrary direction.

When the halt is for the night, and the camp wagons with the tents have not come up, the men bivouac under the clear sky, or seek shelter under a few branches, with which they form a rough shed that will protect them from dew. If possible dry grass or leaves form their bed, and, lying in their great coats upon their india-rubber cloth, they can enjoy peaceful slumber. If there is no cover for the men, then they build fires, and sleep around these as so many radii of a circle, the feet of the sleepers being nearest to the fire. Singular to say, this kind of rough life does not bring with it disease, as one would suppose. If the men are warmly clad, they enjoy more health when bivouacked than when in camp.

The site of a permanent camp should be dry, with good drainage, the dryness of the soil being tested by digging, to see that a stratum of water does not immediately underlie the crust. In cold, damp countries, the material for tents should be close, and, as nearly as possible, water-proof; and when pitched, a good ditch should be dug around it, with the earth banked up against the tent to keep out the cold and rain, and also to prevent draughts. Communicating ditches should be provided to facilitate drainage.

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Extreme cleanliness should prevail within and without the tent. In an encampment the tents should never be crowded, but ample space should be left around each tent for changing its position at least every four days, so as to purify the soil infected by habitation. The earth floor of a tent attracts and absorbs impurities which, unless changed would soon render it a source of disease. Permanence of

camps rapidly induces infction. This frequent changing of tents gives, to be sure, additional trouble to the officers, but this is more than counterbalanced by the health and efficiency of the command. All the garbage of the camp should be thrown at a distance from the tents, and should be buried every evening. The privies for the men are ditches, from three to five feet deep and three feet broad. They should be placed at least one hundred yards from the camps and in an opposite direction to the wind currents, so that offensive odors will be blown away. The slaughter pens should also be placed at a similar distance. Every evening the offal of the day should be covered with three or four inches of earth or a sufficient layer to prevent any smell arising from the day's deposit; and when the trench is two-thirds full it should be closed and another of similar dimensions opened. Where proximity to the water permits, these privies should be established over the water. This will remove a great and common source of infection, which is very difficult to counteract.

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To ensure a comfortable abode for the sick, the site of the regimental hospital should be selected with much care —the driest spot in the camp should be chosen, and the tent well ditched to give thorough drainage. The floor of the tent should be carpeted with oiled floorcloth or painted canvas, which will protect the sick from the emanations from the soil, and will prevent the soil from imbibing animal effluvia. It also keeps out all moisture, which is so deleterious to those lying upon the ground. This painted cloth strictly belongs to the hospital tent, and, as an essential part, should never be overlooked. A certain number of bed-sacks also belong to the hospital. When these are filled with straw, they make a much more comfortable bed than straw thrown in heaps, which is the common mode of treating the sick in the field. There is much comfort in appearances, and these beds add much to the neatness as

well as cleanliness of the tent. The beds are arranged on either side of the tent, with the heads turned toward the wall. Could the beds be elevated upon boards for six or twelve inches, they would place the sick in a purer atmosphere than when lying on the floor, where the heavy deleterious gases of expiration collect. In good weather ventilation of these tents should always be insisted upon. When the painted floor-cloth is not at hand the earthern floor should be well rammed, and should be daily watered with a milky lime water, as a purifier.

The straw should be changed as often as possible, even twice a week, if it can be procured; whilst if the patient can get up, the bed should be well beaten and thoroughly aired daily. *Personal cleanliness of the patient is as important as that of the tent.* Ablutions must be freely used, and under-clothing frequently changed. Whenever the patients permit, the tent should be moved once a week, if it be only a few yards from its former position, so as to enclose a fresh piece of soil not contaminated with animal exhalations. This change of location is particularly required whenever any of the low grades of contagious diseases appear within its walls, or cases under treatment take on an asthænic character.

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CAMP DUTIES OF A REGIMENTAL SURGEON.—We have already shown that the fire of an enemy never decimates an opposing army. Disease is the fell destroyer of armies, and stalks at all times through encampments. Where shot has destroyed its hundreds, insidious diseases, with their long train of symptoms and quiet, noiseless progress, sweep away their ten thousands. To keep an army in health is, then, even more important than to cure wounds from the battle fields. But, as such surgeons in the service are expected to be skilled in both departments, so that, in either case, the troops under their care should suffer no detriment, they should be thoroughly prepared for the very responsible positions which they fill. Conserv-

ative surgery requires much more at the hands of the surgeon than the destructive practice of former times. Every surgeon should now prepare himself for the field by familiarizing himself with operative surgery. Half knowledge leads into meddling, which is far worse than no surgical assistance. *Many a wounded soldier has felt heavily the busy hand of the willing surgeon who lacked the guiding head.* The surgeon has charge of a number of very valuable lives, and the necessity imposed—by the absence of consulting aid—of deciding the most serious and critical cases upon his own unaided judgment demands upon his part, self-reliance, which can only be based upon previous preparation. Camp life gives a surgeon much food for thought and ample personal experience, but gives him no time to consult authors and improve himself with books. He does not see so great a variety of diseases as are met with in civil practice, but he has a wider field for observing the influences of external modifying circumstances, as exposure, improper food, imperfect clothing, irregular work, want of cleanliness, and depressing or exhilirating mental influences. The diseases of a soldier, like those of most trades, are peculiar, each trade begetting its own, whilst it gives immunity to others. The greater uniformity in age, constitution, modes of living, exposure to similar external influences, and strict discipline, modify to a considerable extent the diseases of camp. It is especially the crowding together with the animal emenations from such a number of living beings, that gives character to the phases of disease.

The preservation of the health of the soldier being the sole duty of the military surgeon, he will be expected to use every means within his reach to attain this desirable end, especially by a rigid observance of those forms of discipline and economy which are under the direction and surveillance of the military officers. As diseases will arise among troops, and, as very few of these cannot be arrested by means of art when skilfully applied at an early period, care should be taken that medical skill be promptly resorted to at the

very first sign of indisposition. Hygiene must first claim his attention; under the adage, prevention is better than cure. If the troops are about going into camp he must examine the ground and see whether any causes exist for rendering the place insalubrious. When in a friendly country he should seek information from the local physicians, which will not only give him a better insight into the sanitary condition of the point selected, but will also instruct him upon the diseases prevalent in the locality, and the means which local experience and observation have proved most effective in controlling such diseases. He must see that the troops in camp are supplied with dry straw for beds, and that they air the same with their tents daily, so as to ensure a healthy place for repose, and report any neglect to the commanding officer. He must see that the soldiers are properly clothed and well fed with wholesome; nutritious food, and supplied with an abundance of good water, and, from time to time should suggest to the commanding officer such changes in the diet as will be conducive to the health of the command. If the water is bad, he should study how it can be improved, so as not to act injuriously upon the men. Cleanliness of the encampment and of the tent with frequent ablutions of the body and clothing of the soldiers, should never be absent from his thoughts. He should point out to the commanding officer all nuisances which promise to be detrimental to the health of the corps, and urge their removal, suggesting how they can be best disposed of.

The hospital tents will be pitched upon a dry, well-drained spot, if a building cannot be obtained for the same, and it is the duty of the regimental surgeon to attend to the proper furnishing of the same with all possible conveniences for the sick. He will enforce all proper hospital regulations to promote health and prevent contagion, by ventilation, scrupulous cleanliness, frequent changes of bedding, linen, etc.

At the morning surgeon's call, the sick of the regiment

will be conducted to the hospital by the first sergeants of the various companies, who will each hand to the surgeon a list of all the sick of the company, on which the surgeon will state who are to ramain or go into hospital; who are to return to quarters as sick or convalescents; what duties the canvalescents in quarters are capable of performing; what cases are feigned, and any other information in regard to the sick of the company he may have to communicate to the company cammander. He will then distribute the patients in the hospital, see that they are properly provided with comfortable beds; enter in the proper register the name, the case, the disease; and in the diet and prescription book the medicines which the cases requires. If his assistant is not present, he prepares the medicines and superintends their administration. He will visit the hospital each day as frequently as the state of the sick may require. Should any soldier be taken suddenly sick, his case is at once reported to the surgeon, who will visit and prescribe for him in his tent, unless the case threaten to be serious, when he should be removed without delay to the hospital.

Convalescents, on coming out of the hospital, are not to be put on duty till the surgeon certifies to the commanding officer that they have perfectly recovered; for which purpose it is the duty of the surgeon to make (daily) a particular inspection of these men at morning parade, to prevent any remaining longer exempt from duty than the state of their health renders absolutely necessary. After the surgeon's call, he will make a morning report of all the sick and disabled to the commanding officer. He also recommends that leave of absence be granted on furlough to those convalescents who will recover more rapidly by change of scene and life.

The senior medical officer of a post, hospital, regiment, or detachment, will make monthly, to the medical director, and quarterly, to the surgeon-general, a report of the sick and wounded, of deaths, and certificates granted for dis-

charge from disability, and transmit to him the same, with a statement of the hospital fund. He will also keep the following records, from which the condensed report of the superior medical officer is drawn, viz: a register of patients; a prescription book; a diet book; a case book; copies of his requisition; annual returns, and reports of sick and wounded; and an order and letter book, in which will be transcribed all orders and letters relating to his duties. All requisitions for hospital and medical stores must come from the senior surgeon, with the approval of the commanding officer, certifying that the same are necessary for the sick.

The duties of the assistant surgeon are very similar in many respects to those of the surgeon. If he has the confidence of the regimental surgeon, the patients are equally divided between them; he treating a certain number of sick ordinarily without interference from the senior surgeon, except they be serious cases, when he seeks advice from the regimental surgeon. Although this is the common course pursued, it is not so from right, but by sufferance of the senior surgeon. In the army regulations, the senior surgeon being the superior officer, the assistant surgeon is under his control. He is supposed to do merely the medical duties when the surgeon is present—that is to say, making up medicines, seeing that the patients get them at the proper time, apply dressings, bandage fractured limbs, keep the register, diet and prescription books, and assist in compiling the monthly and quarterly returns. When a detachment is sent off on special service, the assistant surgeon accompanies it as medical officer.

When epidemics occur in camp, then the duties of the medical officer become very arduous; the daily and nightly toil which they are compelled to undergo, the fatigue of body and anxiety of mind which is their daily routine, soon breaks them down, and many an over-zealous surgeon becomes a prey to the disease which his constant efforts are trying to quell in others. This is particularly the case

when typhus is raging in camp, when a neglect of those hygienic precautions which the medical officers are instilling into the men causes many a victim in the medical ranks. Under such conditions it becomes as imperatively the duty of the surgeons to take care of themselves as to attend to the sick; for should they needlessly sacrifice their lives, they entail severe suffering on their regiments. The Crimean surgeons were severely censured, after spending all day in the typhus and cholera hospitals, with tainted atmospheres, for remaining there during the nights also, when there was no necessity for it. It was a useless and dangerous imprudence, an exaggeration of duty, which deprives the army of well-informed men, and impairs the utility of the service. In the Crimea, the surgeons would frequently meet together for scientific conference and for mutual instruction. Here each gave his experience and compared the results of different methods of treatment. Their meetings always terminated in practicing amputations, resections, and the ligation of arteries on the dead subjects. The object of this was not only to gain dexterity in the operative manual, but also to find out who were the most skilled, and therefore most worthy of being intrusted with important duties. It is said that the mortality of the army amounted to two hundred per day, which gave ample material for such practice. These meetings were presided over by one of the highest staff surgeons or medical directors, who would often deliver to the society practical lectures upon the treatment of gunshot wounds. This plan might be carried out in all armies, as it must redound to the benefit of both surgeons and patients.

Duties of the surgeon on the Battle Field.—The common fear which depresses the soldier on the eve of a battle more than any other is not so much death, but the dread of mutilation. Bullets are neither respecters of parts nor persons, and the prospect of losing an eye, an arm or leg makes many a brave man quail before the ordeal through which he is to pass. So that before a battle there is a

vague, uneasy restlessness—a foreboding of coming evil, which takes possession of the bravest, and cannot be driven off except by the commencement of the fight. The early booming of cannon braces all for action, all thaughts of fear or self are now discarded, the demon of war rules triumphantly over the assembled host, and suppresses, through thirst for blood and desire for victory, all depressing influences. There is something in the smell of gunpowder which makes men forget their origin; by its magic wand women are made brave, and cowards heroes. In the eagerness of the fray, an intoxication guides all to acts of daring. Who, in his sober moments, would walk up to the mouth of a loaded cannon to which a torch is being applied? Yet on the battle field find the man who, at the word of command, and whilst under the stimulating intoxication from gunpowder, would not face certain destruction! Fortunate it is that Nature has so constituted us, or the terror of pursuing what duty dictates would be agonizing indeed. The surgeon on the battle field must participate in the dangers, without the stimulation of the conflict; he requires, therefore, a double proportion of courage to sustain him in the trying part which he has to perform.

Upon the eve of a battle, the regimental surgeon has much to do to prepare facilities for the treatment of the wounded. He must see that the hospital stores are brought up with the ammunition wagons, as the articles for treating the wounded and saving the life of comrades are fully as important as those for the destruction of the enemy. He examines his stores, and satisfies himself that nothing which will be required for the wounded has been omitted or forgotten. He examines his instruments, his supply of bandages, lint, india-rubber cloth or oiled or waxed silk, etc.; sees that chloroform and opium, the main support of the wounded, are at hand in sufficient quantity. Water he has not overlooked, as an abundant supply will be needed to meet the incessant, unmitigated thirst of the wounded. He should be well supplied with astringents, of which the

per-chloride or per-sulphate of iron is the best, to control annoying hemorrhage. He should also have a moderate supply of brandy to revive those exhausted from hemorrhage, oil to grease their wounds, and a little tea, sugar, and such medical comforts as will refresh and support the wounded. Having selected from the general stock those articles which he will need, such as all articles for dressing, as lint,* cloth, bandages, oiled silk, sponges, ligatures, adhesive plaster, splints for treating all varieties of fractures, amputating and dressing instruments, with medicines and stimuli, and a full supply of good water. These are carefully put upon a pack mule in two strong iron-bound boxes, called panniers, one hanging on either side of the saddle. One is usually devoted to medicines, the other is used for dressing apparatus. This distribution gives the surgeon great facility in moving about the field where his services may be most required, whilst it dispenses with the hospital store wagon, which is altogether too cumbersome to follow light troops in their varied and active movements. In European armies every regiment has such a pannier, which is continually resupplied from the medical store

*Carded cotton has been extensively used in military surgery, and was found in the Crimea to be a good substitute for lint by the French surgeons, with whom an abundance of lint is a *sine qua non* in the treatment of wounds. As it can be so easily obtained in any part of the Confederate States, and at so trifling a cost it promises speedily to usurp the place of the officinal preparation. Now that tents and meshes are scarcely used, and receptacles for collecting pus are denounced in modern surgical practice, we see no reason why carded cotton, with its very soft, elastic fibre, would not make a more soothing dressing than lint, which is often formed of coarse, hard threads, which would leave their marks upon a sensitive, inflamed surface, and therefore must be the unrecognized cause of pain.

Much can also be said of new cloth versus the old linen, of time-honored reputation. Suffice it to say, in this connection, that an army should never clog its movements by an excess of baggage, and that the old linen (which can be used but once) required for an army is no small item. New cloth may be washed a dozen times, if required, which in itself is no mean recommendation.

wagons. The commanding general may sometimes have good reasons, under particular circumstances, for ordering the medical wagons to remain behind with the baggage; then the conveyance of all needful medical supplies for the wounded on pack horses becomes imperative.

If the army would adopt those regulations of the Prussian service, which compel every soldier going into battle to carry in his knapsack a small bundle of dressings, prepared according to a formula, then the hospital stores could in a great measure be dispensed with, and with few additions to the individual stock, the wounded could receive careful dressing. The instruments and few medicines which the infirmary would require, could then be readily moved from place to place, following the line as the din of battle recedes from the points where the fight had commenced.

The surgeon should examine the means of transporting the wounded from where they fall to the field infirmary. These should consist of at least two stretchers for every one hundred men engaged, although in European armies, four are allowed to each company, besides light ambulance wagons, spring carts, or any other conveyance of transportation, to accommodate in the proportion of forty persons for every one thousand troops. The character of the transport service will depend upon the character of the country in which the war is carried on. In a level country, wagons are the most serviceable, whilst in hilly localities, litters carried by mules would be the most comfortable transportation for the wounded. In European armies, a distinct body of men are employed for conveying the wounded, so that practised hands may soothe the agonies of transportation. This is by far the most humane course, and as a mark of civilized warfare should be of universal adoption. It is highly important that a similar body be instructed to act as nurses as well as attend immediately upon the wounded, as this timely assistance may save many lives on the field. In those armies in which this sanitary

corps has not yet been introduced, the regimental quartermaster in charge of the pioneers and musicians, form a temporary body of carriers. Besides the litters, each bearer carries a canteen full of water, and the assistant surgeon, who follows the litters and directs the transportation, is accompanied by two men as orderlies. One of these orderlies who habitually follows the medical officer, whether in battle or on march, carries the hospital knapsack which contains instruments, ligatures, sponges, lint, oiled silk, bandages, tapes, pins, two field tourniquets, a bottle of brandy, and one of landanum or morphine, or other medicines which may be needed in an emergency on the march or in the field. One of the ordelies is armed to protect the party against stragglers and marauders. The surgeon, for a similar reason, should be also armed with a revolver. The orderlies assist the surgeon in placing the wounded carefully in the wagons; and also following them, are at hand to assist in unloading the wagons at the field infirmary.

When the troops deploy or form for action, the surgeons, with their assistants and pack horses, move a short distance to the rear out of the range of the shot, and they establish their field infirmary. It would be convenient if some house could be used for this temporary hospital.

Where this cannot be had, the shade of trees or the shelter of a hill-side will answer the temporary wants of the surgeon. If the body of troops about entering battle is a large one with an extended line, several of these points should be selected and marked by a suitable yellow flag which designates the spot where those slightly wounded can seek surgical aid. Instead of each regimental surgeon establishing such for his regiment, it would be much better if they would concentrate for individual assistance, when the wounded would receive more attention, and the work of dressing would be much expedited.

When surgeons combine at the field infirmaries, establish at once, if possible, a division of labor; let there be an

understanding that those best adapted by experience to undertake certain duties should confine themselves strictly to the same. When each one knows what roll he has to play, and does not interfere with others, a great deal more work can be accomplished than where each one acts independently for himself. The force of this will appear, when it is remembered that all experience shows the medical staff of an army, however numerous, to be always too few on battle day. *Remember that all the wounded must undergo a thorough examination, and all needful operations must be performed within twenty-four hours*, or the wounded suffer from neglect. Now, take into consideration the very small surgical staff of our army and the accuracy of fire of the contestants, with the most approved and destructive arms with very long range, and we will immediately see the necessity of economizing time and labor.

The movements and position of the troops and the character of the ground, must establish the necessity for the greater or less concentration of surgeons at the field infirmaries. As the troops advance, they are followed by the bandsmen or bearers and, if the country permits it, the ambulance wagons, under charge of the quartermaster and assistant surgeon with their orderlies. They station themselves in the rear of the advancing line, where they can distinctly see what happens, and remove immediately, without the range of the shot, those who may fall wounded. It is imperiously demanded, on the score of humanity, that the wounded be removed from the field of battle with as little delay as possible, for early treatment. In gunshot wounds, above all others, early surgical assistance is of the greatest moment for success; and in many, as in chest wounds, what is omitted on the battle field immediately after the injury is received is never made up, with whatsoever diligence and skill the after-treatment is pursued. Therein is the great advantage of having a special transport corps, otherwise the excitement of battle or the eagerness of pursuit carries the line to a distance from the ground

where the battle first commenced; and it is only after the victory is achieved that the wounded are thought of by their comrades, who, in scouring the field, find many a dear friend whose life has paid the forfeit of delay.

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As a soldier falls or is wounded in battle, he is at once approached by the assistant surgeon, who looks at his wounds, applies the hasty dressing which they require, then placing him comfortably on the litter, attends to his transportation. He can do as much for the wounded in this way as if he were actively engaged in operating. Should his injury permit him to walk, a compress and bandage is placed upon his wounds, if they be severe, and he is directed to the field infirmary. In those with fractured limbs, a rapid glance, quick intelligence, and an inventive turn, at once tells the surgeon what is required and suggests the means of effecting it. With a sword-blade, a ramrod or a bayonet, with a handkerchief or strip of cloth, a fracture apparatus is at once improvised, and the thanks of the wounded, now in comparative comfort, are freely bestowed during his transportation to the infirmary or general hospital. If he has a mangled limb, which hangs by a very small portion of the soft parts, the separation should be at once effected by separating the dangling parts in the mangled tissues. Should he be suffering much pain, which is not usually the case, the surgeon gives him a powder of morphine, with which his pockets are well stored, and at once transports him to the infirmary, where the proper amputation is performed. If the wound be an abdominal one, with protrusion of the intestines, he sees whether the bowel is injured or not. If not injured, returns it carefully within the abdomen, and gives a large dose of morphine to ensure quiet. Should the intestine be cut by the ball, he warns the carriers and assistants from interfering until the wounded man be carefully transported to the infirmary. In case of punctured chest wounds, with internal hemorrhage, coughing of bloody sputa and great oppression in the breathing,

the treatment, to be ultimately successful, must commence at once. The surgeon, in placing the wounded man in the litter, will, if the symptoms be urgent, open a vein in his arm to save him from immediate death. To this timely bleeding, on the very spot where the accident has occurred, and not wait until transported to a more convenient place, the life of the soldier often depends. Those wounded in the head, if insensible, require very careful transportation; they should be as little disturbed as possible. Chest wounds, head wounds, fractured legs give the most trouble, as they require the greatest care in conveying them safely to the designated place for surgical treatment.

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When the wounds are quite recent, before the tissues become engorged, there is a temporary absence of pain and a relaxation of the injured parts, which favors an examination. The wound should now be examined to its very bottom, to detect the presence of foreign bodies, whether they be balls, wadding, portions of clothing, detached spiculæ of bone, etc. *For this purpose the finger is the proper probe*, and is used on all occasions, with rare exceptions. It is an intelligent instrument, and, appreciating what it feels, it will not only discover the character of foreign bodies complicating the canal, but will avoid increasing the dangers by making new lesions in the depth of the wound. In fresh gunshot wounds, the apertures which the balls now used in warfare make, are large enough to admit the finger when introduced with care. Very rarely is it necessary to dilate a wound, with the probe-pointed bistoury, to assist in its exploration. *The silver probe is a dangerous and deceptive instrument, and should be discarded from the battle field.* Its use on such occasions, for exploring recent wounds, marks the novice.

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Should large arteries be injured, they should be ligated always in situ above and below the point injured, and for this purpose the wound must be enlarged.

As a general rule, torn tissues will reunite, whilst bruisd, crushed tissues slough. All wounds in which a probability exists of union by the first intention, should be nicely adjusted by adhesive plaster. The great inconvenience of the ordinary diachylon plaster, which requires heat to make it adhere, must exclude it from field service. The Husband's, or isinglass plaster, is much more easily applied, requires no heat, a little moisture being all that is needed, is not injured by hot weather, and when closing a wound gives as much support as the diachylon. It also excludes, completely, the air, with its injurious influences, which it not its least advantage.

Should a limb be so injured that joints are largely opened into, main blood-vessels and nerves torn through, soft parts extensively lacerated, or a limb flayed, then amputation should follow immediately the condemnation of the limb: field surgery here proves itself the only successful surgery, as all statistics clearly show. If the limb is simply fractured, even if comminuted without injury to the main blood-vessels and nerves, and without complications with joint injuries, they should be considered simple fractures, and dressed as such at the field infirmary. If, in connection with a condemned limb other mortal injuries exist, the impropriety of performing amputation is clearly seen. When joints are crushed, or the heads of bones perforated, resections are urgently demanded, and should be performed before reaction takes place.

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Although the nervous shock accompanies the most serious wounds, it may often be met with in the most trivial injuries. It is recognized by the sufferer becoming cold, faint and pale, with a surface bedewed with a cold sweat; the pulse is small and flickering; there is anxiety, mental depression, with at times incoherence of speech. Often this shock is very transient when accompanying simple wounds. A drink of water and a few encouraging words may be sufficient to dispel it. When it persists,

even where the injury appears trivial, it forebodes trouble; and a more careful examination may detect a fatal injury. It is the duration, more than the degree of the shock, which makes the serious character of the wound; and when this constitutional alarm persists, there is a great fear that hidden mischief is lurking, and the surgeon should be very guarded in his opinion of the case. Keeping the patient warm, in the recumbent posture, with blankets and hot bottles, administering wine, brandy, ammonia, hartshorn to the nostrils, frictions and cataplasms to the extremities is the course pursued to restore nervous energy.

In all painful operations, chloroform should be freely administered, to produce the designed anæsthesia. Like all valuable medicinal agents, which when taken in overdoses are poisonous, it can remove suffering or destroy life according to the administration. The dangers can be avoided by never pushing its inhalation to stertorous breathing; stop as soon as insensibility is attained. The recent Crimean and Italian wars, in recording the advantage of chloroform in field surgery, show it to be now one of the indispensables for successful practice.

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The common dressings which all wounds receive is a wet cloth covered with a piece of oiled silk or waxed cloth, and secured with a single turn of the roll of bandage. This keeps the wound moist, and is the most soothing, comfortable, efficient and simple dressing which can be devised. By wetting the outer bandage, the cold produced by evaporation is transmitted through to the wound, whilst the oiled silk keeps the parts moist. When oiled or india-rubber cloth cannot be obtained, and no facilities exist for keeping the wound constantly wet, whilst the patient is being transported to the general hospital, a cloth well greased with olive oil is the best substitute for the wet dressing. Many ragged wounds may have their edges paired off and then brought together, with every prospect

of speedy union, provided the after treatment with cold dressings is judiciously followed.

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The indications of treatment, in all gunshot wounds, are 1st, To control hemorrhage; 2d, To cleanse the wound by removing all foreign bodies, and, 3d, To apply such dressings and pursue such a rational course of treatment as will establish rapid cicatrization.

Hemorrhage, which produces such terror in the bystanders and anxiety in the patient, should never unnerve the surgeon, who requires all of his self-possession and surgical tact to cope successfully with this ebbing away of life. Fortunately, in gunshot wounds, serious hemorrhage is of rare occurrence; and when the largest arteries are injured, they either cease bleeding spontaneously, or the patient dies so rapidly, that art is of little avail. If the case is not injuriously interfered with, the natural hemostatics soon controls the bleeding. The ragged character of the wound, and the nervous shock accompanying the injury, or brought on by the loss of blood, reaction upon the circulatory organs, so diminishes the heart's impulse and drives so little blood to the extremities; as to favor a stagnation of blood in the wound. The formation of a clot plugs up the orifice in a bleeding vessel, and stops any further loss of blood.

This spontaneous arrest of hemorrhage is usually permanent; and if the ordinary prophylactic course is pursued of absolute rest and quiet, with the limb elevated and bandaged, no return shows itself. Should, on the contrary, meddlesome surgery suggest the use of a tourniquet, which cuts off the circulation and especially the veinous return, the limb soon swells, tissues become engorged, excessive extravasation in the wound follows, and a trail is laid for future mischief. The field tourniquet, in former days, was so much in vogue that it was considered indispensable on the battle field, and was therefore carried in large numbers, to be applied to every limb from which blood was trickling, or from which hemorrhage was feared. Now, they are

nearly discarded from field service, and recent experience recommends their abolition from the field, as doing more harm than good to the wounded. Unless very tightly applied, it is of no service, as it does not control the bleeding, and if firmly applied acts as a general ligature around the extremity, and can be used but for a short time without injury to the limb.

Recent writers warn surgeons of the too hasty use of hemostatics and suggest that it is better for the wounded to lose a little blood, which will diminish the heart's propulsive force, than have the wounded tissues filled with extravasated blood. If the hemorrhage be free, immediately after the receipt of injury, the best mode of controlling it would be the application of a ball of lint, a compress, or sponge over the wound, secured by a bandage, which, in closing the outer orifice, favors the formation of a clot. If the hemorrhage is at all active, as if from some large artery, in addition to the compress on the wound, the entire limb should be carefully enveloped in a bandage, to some distance above the injury, so that by compressing the soft parts it could diminish the amount of circulating fluid in the limb, and prevent the ingress of blood into the tissues. The hemostatic properties of this dressing can be increased by soaking the sponge or compress covering the wound with the per chloride or per sulphate of iron, which, as a powerful astringent, when coming in contact with fresh blood, will immediately form a clot. A lump of ice placed upon the compress will act with equal efficiency. A sponge or compress, with or without the iron styptic, tied on the bleeding wound, is all that the surgeon superintending the transportation of the wounded is expected to do. Unless the hemorrhage is very violent, threatening immediate destruction of life, the tourniquet is rarely required. All recent writers on military surgery recommend that field tourniquets be dispensed with, as they are generally a useless, and often when carelessly used, a dangerous instrument. The finger pressure of an intelligent assistant is

better than any tourniquet ever made, and is a far preferable means of controlling excessive hemorrhage, which the compress and bandage may fail to check. The femoral artery, for any injury to its trunk or large branches, should be compressed in the groin where it runs over the pubic bone; the brachial, where it pulsates against the head of the humerus, as here its course is nearly subscutaneous. When the position of these main trunks are shown to any intelligent assistant, and he is made to recognize the throbbing of the artery, he will have no difficulty in keeping the vessel compressed during the transportation.

As soon as the wounded arrives at the temporary resting place where the surgeons are assembled, all bandages are removed, and the wound carefully examined. A glance at the wound when the clothing has been previously examined, will often tell when there are two orifices differing in appearance and in a direct line with each other, whether foreign bodies have lodged or not. As the patient is now faint from the loss of blood and from nervous depression, the wound not yet being painful or swollen, the *surgeon using his finger, which is the only admissible probe on such occasions that the military surgeon recognizes*, examines the entire extent of the wound, searching for foreign bodies.

This examination is made without fear of reproducing hemorrhage, as the finger cannot displace the clots which hold firmly to the openings in the vessels. Every surgeon has noticed how rudely a stump might be sponged, and what force it requires to wipe away clots which formed over the face of a smooth, incised, open wound. The adhesions are increased a hundred-fold by the irregularities of a concealed bullet track. The finger finds no difficulty in entering a hole through which a bullet has passed, if examined, as every wound should be, before swelling has taken place.

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The wound having been carefully examined by the finger within and careful manipulations without, and the foreign

body detected, it should be at once removed. This rule may nearly be considered absolute, as all military surgeons place great weight upon its accomplishment. The question is not so much whether balls *can* remain innocuous in the flesh, *but do they?* Those who have had experience in gunshot wounds in the field, know how excessive is the irritability caused by the presence of a ball in a wound; how restless and irritable the patient is until it is removed; how profuse the suppuration and prolonged the period of treatment in those cases in which it has been left; and how frequently the after-consequences are so distressing, the pain so permanent, and discharge so constant, as to demand future interference or make life a burden. If such be the case with ball, how much the more urgent the extraction of the foreign bodies is indicated, especially fragments of shell, portions of clothing, etc.

* * * *

If the ball be left loose in the soft parts, a bullet forceps can be made to seize it; and it can be extracted without difficulty, *provided the disengaged hand of the surgeon support the limb on the opposite side to that which the forceps is introduced.* Otherwise the ball glides in front of the forceps and cannot be seized. The ordinary bullet forceps, as simulating the dressing forceps of the pocket case, was the instrument prefered by Larry, and is still, deservedly, in general use.

* * * *

When a ball is firmly imbedded in bone, it is removed by boring into it with a gimlet, which holds it securely and permits sufficient force being used for dislodging it, or it may be cut out by using a trephine. Should a ball have traversed a limb, as it often does, and its escape be resisted by the tough, elastic skin which very often successfully impedes the further progress of the ball, it should be removed by making an incision over its position, and not

be sought and drawn the entire length of track which it had traversed.

* * * *

The ligation of an artery, which is the only sure precaution against the return of hemorrhage, is not only a difficult operation, requiring much skill for its successful performance, but when necessary to control the bleeding from a recent wound, becomes a very dangerous one to the safety of the limb or life of the individual. In cases of disease, nature, always on the alert, has enlarged contiguous blood-vessels, which are ready to assume all the functions of the one requiring obliteration. In a wound in a healthy person no such preparation has been made; and in cutting off the main supply of blood in a limb it becomes a very serious question, often answered by the loss of the limb and even life, whether the circulation will be re-established in time to save the limb from mortifying. When a ligature is placed upon the main artery of a limb for disease, previous developments in the collateral circulation, have been to such an extent, that the extremity may not even lose temperature after the ligation, and as there is no diminution of the nutrient supply there is no fear of mortification. If placed on a healthy vessel for an injury, the limb at once becomes pale and cold, requiring artificial warmth and the circulation be re-established, when the limb becomes actually warmer than its colleague. The arterial supply is now disseminated in vessels much nearer the surface than before, where its chief channel was deeply embedded in the tissues. The rapidity of this collateral development in the limb is well exhibited in primary and secondary amputations. When a thigh is amputated in a healthy portion, very seldom are there more than three or four ligatures required to stop all oozing and render the stump quite dry. If the amputation be necessary at the same point three or four days after an injury to the main vessel has been received, the number is greatly increased: as many as twenty-eight arteries have been

ligated by Langenbeck after amputating a thigh under similar circumstances.

Should active hemorrhage continue and show no disposition to cease, the wound should be dilated, the bleeding mouths of the artery found, and *a ligature applied both above and below the injury.* This has become the fixed practice and the only safe one, taking its place among the aphorisms of surgery. The universal adoption of this practice is not only based upon experience and observation, but could be determined *à priori* from the physiology and anatomical distribution of arteries.

* * * *

Guthrie lays down the two following rules as the great principles of surgery, to be observed in the cases of wounded arteries, and which ought never to be absent from the mind of the surgeon:

1. *That no operation ought to be performed upon a wounded artery unless it bleeds.*

2. *That no operation is to be done for a wounded artery in the first instance, but at the spot injured, unless such operation not only appears to be but is impracticable.*

When it is necessary to ligate an artery, the surgeon must be guided by his anatomical knowledge, and by the pulsation in finding it. In dilating the wound so as to expose the bleeding mouths, the incisions should be made parallel to the course of the vessel, and sufficiently free to facilitate the search. The dissection is carefully conducted, dividing layer by layer, and avoiding the nerves and veins which always accompanying the large arteries. When the bleeding mouth is so exposed that the origin of the jet of blood is seen, the vessel is transfixed by a tenaculum drawn out and secured as it would be in a stump after amputation.

Where it is impossible to ligate the bleeding vessel at the point wounded, a point should be selected, at which the vessel is comparatively isolated, easily discovered, and free from large collateral branches. *In exposing it make a*

free incision. The common mistake that most surgeons make is a small incision, which hampers the search. When we approach the artery, use the grooved director to isolate those cellular layers in which the vessel is always found The point of the knife should *never* be used for this purpose. The lips of the wound should be drawn asunder by an assistant, so as to give to the operator the light necessary for accomplishing speedily and succeesfully the ligation. In all cases requiring such an operation, it is desirable to to have the patient completely under control, and, therefore, chloroform should be admisistered.

When the artery is found, and the ligature passed under it, before tying it be quite sure that it is vessel, and it alone and not the nerve that has been seized. To be satisfied on this point, it is only necessary to draw slightly upon the thread, and examine above and below to see whether the pulsation has altogether ceased below the ligature. Having determined that the thread is properly placed, it is then firmly tied, the ends are brought out of the wound and secured under a strip of adhesive plaster, attached to the immediate neighborhood of the wound. This mode of disposing of it will protect it from becoming entangled in the ordinary dressing, and be drawn upon when these are daily removed. Water dressings would be the proper after-treatment. The thread will have come away spontaneously, by the eighth, twelfth or sixteenth day, according to the size of the vessel ligated.

* * * *

Local treatment of wounds.—Having removed all foreign bodies, and hemorrhage having ceased, the dressing now required should be of the simplest description. It is known that gunshot wounds, favoring the contused variety, show a constant disposition to suppurate and often to slough. *This process of suppuration is not necessary to the healing of the wound, and should be kept in subjection as much as possible.* This is effected by the continued application of cold, which, by keeping down excessive reaction, and keeping out an

excess of blood, diminishes the source of the pus supply, and thus hastens the cure. In former times, suppuration was considered essential in the healing of all wounds, by permitting the escape of so much poisonous matter, which had accumulated in the system, and which must now find a vent, or, if retained, would be considered the satisfactory cause of any sickness which the wounded man may ever suffer from hereafter. The wound was therefore plugged with a lint tent, piles of greasy lint in cushions were applied, and after covering with a sufficient number of compresses and bandages, a forcing bed was formed, which supplied pus to the satisfaction of all interested; and it was common enough to see life drain away from this opening.

This smothering of wounds and smearing on of greasy ointments, which the wounded formerly encountered, was a second enemy, far more fatal than the enemy on the battle field; as in its ranks ranged exhausting suppuration, with its hectic; pyæmia, with its rapid poisoning; hospital gangrene, with its sudden collapse, and erysipelas, with its thousands of victims, broken-down constitutions, tedious convalesence, very protracted cures, and endless pain and annoyance.

How much more rational is the present practice. *Keep away all hot dressings which invite blood to the part.* Vote poultices a curse, and eject the dirty, troublesome application. Guthrie says poultices should not be admitted in a military hospital; they are generally cloaks for negligence, and sure precursors of amputation in all serious injuries. With more recent writers they even meet with less favor.

The only dressing required for wounds, of whatever character, is the water dressing, and it should be used as follows: apply a single thickness of wet linen or cotten cloth over the wound, allowing it to extend over a considerable surface. If possible, cover this with a layer of oiled silk, waxed cloth, or india-rubber tissue. A second layer of cloth or a band secures the two former layers in position, so that they will not be displaced by the motions of the patient in

sleeping. Then, either squeeze cold water frequently upon this outer cloth, which will keep up the low temperature; or what is a much more convenient and less laborious plan, suspend a bucket or some vessel containing water in the neighborhood of the wound, having a narrow slip of cloth, or, what is better, a lamp wick from the suspended vessel to the bandage upon the wounded limb. By capillary attraction, a constant stream of water is carried from the vessel to the dressing, and by its evaporation, robbing the skin of its animal temperature to get a sufficient quantity of heat to convert the water into aqueous vapor, it refrigerates the limb. The advantage of using the oiled silk, waxed cloth, or india-rubber tissue is, that should the water supply accidentally give out in the suspended vessel, the piece of cloth beneath it remains moist upon the wound. The wet cloth absorbs the discharges, and should be changed two or three times a day, it being well understood that they be disturbed as seldom as possible, compatible with cleanliness.

The surgeon should never be in haste to change the cold for warm applications. Should the virtues of a poultice be called into requisition, a soft wet compress covered with oiled silk and secured by a flannel roller or outer compress, is always at hand, and will be found to combine, in a simple form, all the properties of a poultice. It is light, moist, soft, and is kept warm by absorbing animal heat, which the oiled silk and outer compress retains. If we add to these, cleanliness, facility of medication, and the readiness with which an impromptu dressing can be made, we find an array of advantages which excludes all substitutes.

A more effectual mode of keeping down reaction is, by using ice bladders, which are placed upon the india-rubber, waxed or oiled silk covering. These are of very general application, and make the least call upon the personal attention of nurses. *Whenever ice is used, never apply it directly to the skin, but always through the intervention of compresses* which may be made sufficiently thick to accommodate

the application to the sensitiveness of the patient. When possible, these bladders should be india-rubber or gutta-percha. A large supply of these should always be on hand. The animal bladder is a miserable substitute, as it is not only a very dirty application, allowing the water to ooze out and keep the patient constantly wet, but the bladders become very offensive, and are soon destroyed.

Cold water is the only proper and universal antiphlogistic that can be applied to wounds. It has the convenience of always being at hand, it keeps up a uniform action, is clean, simple, cheap, agreeable to the feelings of the patient, easily obtained, easily applied, demands least care from the nurses, who have their hands usually full, and is withal effectual. With the judicious application of the cold the surgeon can defy inflammation. Cold acts by keeping down temperature, constringing vessels, and keeping blood from the parts injured; so that inflammation, which consists in the engorgement of blood-vessels and an excessive supply of blood, cannot get a foothold. Heat, redness, pain and swelling, all depend upon congestion; control the supply of blood to a part, and inflammation is kept in abeyance.

As the advantages of cold water dressing are obtained through the evaporating properties of water, this action may be increased by medicating it with saline substances or alcoholic tinctures. Sugar of lead, sulphate of zinc, tannin, muriate of ammonia or laudanum, spirits of camphor, and, especially, tincture of arnica would be useful adjuvants. Whilst the irrigation is going on, the compresses next the skin may be moistened every three or four hours with any of the above preparations. Should the wounded patient feel chilly, the cold dressing will not be used until reaction has taken place. There are a few persons with whom cold water is not admissible. In all cases the feelings of the patient will be our guide as to the applicability of the remedy. When not grateful and refreshing to the patient, but, on the contrary, the cause of the complaints,

the irrigation must be superseded by a wet compress, covered with oiled silk or a waxed cloth. This will soon attain the temperature of the body, and will keep the parts moist and soft. The dressing requires to be changed twice in twenty-four hours; not that the compress would get dry, for the perspiration from the part which is kept in by the oiled silk would bathe it in a continual and permanent moisture. The object in changing is to get rid of this secretion, which, by decomposing, would irritate the wound.

A question of great moment is, when shall we desist from water applications and change for some more useful or appropriate dressing? According to the present rational views of surgeons, no other dressing is ever required, however serious a wound may be. As long as inflammation threatens, so long is it necessary to prevent engorgements. As long as suppuration is kept up, so long will the efficacy of cold be required to constringe the blood-vessels and control the source of the purulent supply.

* * * *

We have already said that a surgeon is never warranted in cutting down upon an artery and tying it upon suspicion—he must be an eye-witness of the hemorrhage, and see that it cannot be controlled by other means. The ligation of an artery is always a troublesome operation, and from the fear of subsequent mortification, always jeopards the limb, and necessarily with it the life of the patient. This is specially the case in recent wounds, before nature has prepared a collateral circulation, so that the rule which we have laid down is imperative, *never ligate an artery, however large, in which hemorrhage has spontaneously ceased;* and, moreover, that a good compress is usually sufficient, when applied immediately after the receipt of the injury on the battle field, to stop the bleeding even from the largest vessels, when position, quiet, rest, and other prophylactics will prevent its return.

* * * *

This being well understood, we can now explain why

a ligature placed on the upper orifice alone, or on the course of the artery above the injury, should not stop but only temporarily control the hemorrhage. As soon as the collateral circulation above the ligated point is re-established, the lower opening in the vessel remaining as before, hemorrhage must occur, or, if this circulation is not re-established mortification must follow. *The rule is then imperative, ligate both ends of the vessel at the point wounded; this is the only safe course to pursue.* Another strong reason why the ligature should be applied to the wounded ends of the artery is, that there is always some uncertainty as to the vessel injured. The very serious and often fatal operation of ligating the femoral artery has been performed for injury to one of its branches, which had not been suspected until a post-mortem examination revealed the source of bleeding. When the ligature is applied to the bleeding mouths, this accident cannot happen.

The course which should be adopted in the case of an injured artery bleeding, is as follows: After the hemorrhage has been once controlled, through either some carelessnes on the part of the surgeon or restlessness on the part of the patient, getting up to help himself when he had strict orders to the contrary, etc., or perhaps from rough transportation over bad roads, or the sloughing of the wound, hemorrhage re-appears, the limb should be at once bandaged from the extremity upward, making careful, regular pressure, so as to diminish the quantity of circulating fluid. Over the course of the main artery, and for some little distance below the wound, a compress saturated or not with some of the styptic preparations of iron should be firmly secured, the bandaging of the limb extending to one or two inches above the injury. The patient is then to be placed upon his back, the limb elevated and an ice bladder applied over the wound. Absolute quiet should be enjoined, and secured by a large dose of opium.

In many cases, this dressing will bring about the desired object, when assisted by those internal remedies which

control the force of the circulation, as veratrum viride, digitalis, etc. By the use of the compress saturated with per chloride of iron, in connection with absolute rest, I have succeeded in checking secondary hemorrhage from the carotid artery after the escape of the ligature. But should the parts be so situated that this pressure cannot be applied for a sufficiently long time, or should it not control the bleeding, then the proper course is to ligate the mouths of the artery in the wound without further delay. No case of secondary hemorrhage should destroy life by repeated recurrence; a surgeon is very culpable who permits life to ebb away from his grasp. Physicians cannot be too guarded against the delusive attempts at stopping the bleeding after the recurrence of the secondary hemorrhage, it is certain to return and certain to destroy life, as experience repeatedly proves. Every fresh hemorrhage increases the dangers and doubles the risks, *therefore, never neglect ligating after the second hemorrhage.*

You must not be deterred from placing a ligature on the open mouths of an artery in a suppurating wound, on the deeply grounded, but erroneous idea, that the artery has had its coats softened by this process. Practical surgery shows conclusively, that the coats are tough enough to sustain a ligature in a suppurating wound, and therefore the rule should have no exception. *Ligate in the wound under any circumstances, when it is possible.* The swelling and infiltration of tissues, renders the search after the injured artery difficult, but the surgeon, who, looking to the side of humanity, considers it a sacred duty to do everything for the interest of the wounded, must not allow difficulties to interfere with his proper course. Safety lies alone in this operation. The difficulties must be met and overcome.

The following appearances will be observed in the wound, and will assist in the search: After dividing the infiltrated tissues, should the injury have been received over forty-eight hours, particularly if five or six days have intervened,

the ends of the vessel will be found incarcerated in a mass of greenish yellow fibrine which indicates in a remarkable manner their situation. That which conceals the lower mouth of the vessel is always in smaller quantity. When post-mortem examinations are made, a probe introduced into the artery from below would make its appearance at a point under the yellow patch, raising a thin portion as it protrudes; and should the patient have been destroyed by secondary hemorrhage, an opening will usually be found in this pellicle Through the upper portion of the artery the probe would pass down with much more difficulty, owing to a contracted tube plugged with coagulæ—conditions which do not exist in the lower portion. These lymphy, yellowish green spots are, then, our guides after the wound has been freely dilated.

In a surgical operation, especially in ligating arteries, never cramp oneself from the fear of making too large an opening; the error is always on the other side. Having found and ligated the orifices, the water dressing should be continued as before, care being taken not to apply it should the limb become cool and pale. This is not usually the case after secondary hemorrhage, for the return of bleeding indicates a re-established circulation, which the ligature at the bleeding mouths cannot now influence to the injury of the limb. Should it be impossible to find the bleeding mouths, after a long and careful search, then we will be reluctantly compelled to adopt the less satisfactory operation of ligating the artery above the wound; hoping that it may obviate further operation. Often, however, when this last plan has been adopted, a return of the hemorrhage necessitates a second ligature upon some higher point; and should this fail, as is not frequently the case, amputation of the limb will be the only resort to save life. Amputation must be equally resorted to if, after the application of a ligature, the circulation not being re-established, mortification of the limb ensues. In either case amputate

above the seat of the ligature, so as to ensure a supply of blood to the stump for its nutrition.

These are some of the dangers incurred when the surgeon does not adopt the only proper course to stop the trouble at its commencement. Military hospital statistics show heavy mortuary lists where this rule is not recognized and followed. As the ligature acts as a foreign body, and must come away, it is of little importance what is used for that purpose, a strong cotton, flax or silk thread, fulfills all the indications required. When applied, it should not be interfered with until it has either come away of its own accord, or ten or fifteen days have elapsed, when cautious traction might be attempted to hasten its removal.

Silver wire has been spoken of as ligatures for arteries. However well it may answer in fresh wounds where union by the first intention can be obtained, it is quite out of place in suppurating wounds, as when ligatures are applied for controlling secondary hemorrhage.

Punctured wounds made by the bayonet or sabre, require similar treatment. If the history and appearances clearly indicate the character of the wound, there will be no need of probing for imaginary foreign bodies. Such wounds usually bleed more freely than in gunshot. The hemorrhage is susceptible of control by the same means; pressure being preferred to ligation of arteries. The treatment should be cold water dressings,—irrigation preferred. Protect the wound from air if possible, by covering it with adhesive plasters, or collodion, and *dress it as seldom as possible*. *Once* probing of such a wound should satisfy the curiosity of any surgeon. A frequent repetition of this meddlesome surgery must end in mischief, beside the needless pain inflicted upon the wounded man.

Should a bayonet or sabre wound transfix one of the natural cavities, the internal injury may be rapidly fatal from hemorrhage, or the injury inflicted upon the contained organs may, sooner or later, lead to the destruction of the wounded by visceral inflammation. Under ordinary

conditions, when such wounds exist in the extremities, where no large vessels are implicated, they require no special treatment. It is a class of wounds not as frequently met with in military surgery as one would suppose. The newly introduced sabre bayonet, when plunged into the body leaves but little work for the surgeon. Such cases seldom leave the battle field alive.

When the ordinary bayonet has buried itself deeply in a limb, supuration may appear in the march of the wound. Should pus be suspected, and fears exist that it may be pent up under a fascia, it would be necessary to dilate the wound to permit of its free escape. Under no other condition, except for serious hemorrhage, where it is necessary to ligate the open mouth of the bleeding vessel, should a punctured wound made by either sword or bayonet be dilated.

Simple incised wounds, as sabre cuts, will be closed by adhesive plaster (or sutures which are preferable, should there be any tendency to gaping,) to be followed by the cold water dressing. Should the wound be not of a serious character, it may be left even without after-dressing—the little oozing from its edges, when drawn together by straps or sutures, dries into a scab along the line of wound, and excludes air with its pernicious influences. This permits of the remodelling process, and cicatrization is effected without suppuration.

In gunshot wounds, the swelling which shows itself a few hours after the injury has been received, continues increasing until the completion of the third day, when it has attained its acme with commencing suppuration. Should sloughing occur, it will show itself by the sixth or seventh. On the eighth or ninth day, the slough is in most cases separated from the edges of the track of the ball, and in a few days more will have disengaged itself. With the cleansing of the wound, the inflammation gradually subsides, the swelling diminishes, purulent discharge lessens in quantity, and the wound commences contracting. The

middle portion of the track first closes, and with it, the opening of exit, leaving a funnel-shaped canal, which diminishes from day to day, becoming more superficial, until no depth is left to the orifice of entrance, which cicatrizes with a depression, marking distinctly the nature of the injury which has been received. This is the ordinary course which gunshot wounds take when judiciously treated in good constitutions.

The general treatment of such cases consist chiefly in interfering with the general health as little as possible. The commonly prescribed antiphlogistic remedies are, with but few exceptions, not required. The endless list of emetics, purgatives, diuretics, and diaphoretics, to which some European writers still cling with wonderful tenacity, can be dispensed with with benefit.—*Chisolm's Military Surgery.*

Practice of Medicine.

Typhoid Fever.

Outline of Treatment.—As it has been shown that enteric fever presents different grades of severity, so will it appear proper that the treatment should be alike varied to meet the indications of each form. I shall, under this caption, speak of the course of practice I am myself in the habit of employing in each of these forms of the disease.

First. *The Mild Form.*—General bleeding I have very rarely practiced in either form—but three times I believe in the 180 cases. But the local abstraction of blood by cups with me is a frequent practice. They may be applied to the nucha and temples when headache is severe, and upon the bowels when pain and tenderness exist. An emeto-cathartic of calomel and ipecacuanha in the beginning, I am much in favor of, and never omit it unless the bowels are too much purged without medicine. After this I am in the habit of being content with a daily change of the body and bed linen; cups, and poultices to the bowels, when tenderness exists; a draught of effervescing water, composed of citric acid and bicorbonate of potassa, several times during the day; a Dovers powder at night to procure rest, followed by one in the morning, if the bowels are acting too frequently; if not moved naturally every day, an occasional glass of Seidlitz water to influence a regular action; a little spts. nitre. dulc. after the first few days; a cloth dipped in cold water and applied to the forehead, when headache is present; cold water for drinks, but not in two great quantities at a time; the *veratrum viride* to

control the pulse when it runs above 110; occasional drinks of sol. chlor. potash; and the regular allowance of a little food.

Second. *The Intermediate Form.*—In this form, instead of sponging the surface with cold water, tepid water with vinegar, I think is best. Instead of the effervescing water, the *spiritus mindereri* is substituted, in the dose of a half fluidounce every three or four hours. To control the pulse, and thereby prevent damage of important organs, the tr. verat. vir. is to be administered and pushed to the telling point, after which the dose is to be reduced, and its action maintained by its administration in sol. chlor. potash every three or four hours. When there is tenderness on presure over the bowels, free cupping should be employed, not with small cups, but the largest ones to be had, followed by poultices of mush or warm buckwheat cakes, and, if thought advisable, these to be sprinkled with flour of mustard, and made large enough to cover all over the bowels, and applied as often as they become cold, or until pain and tenderness are relieved. It is always best that the bowels should be suffered to remain moderately loose. Two or three discharges a day, I think, are of service, and if these do not take place naturally, some mild laxative should be administered. But should there be too great a looseness of the bowels, which is most commonly the case, they may be restrained by a dose of Dover's powder three or four times a day. It is in this and the subsequent form that the good effects of opium, when administered with due discrimination, are to be witnessed. A favorite formula with me is, tinct. opii., Hoffman's anodyne, *aa* ʒ iij; spts. lavender comp. ʒ ij. Dose, a teaspoonful, given in the morning. For a night dose, six or eight grains of Dover's powder, with the addition of a little sulph. of morphia and camphor pulv.

In many instances the above course of treatment is all that is necessary to conduct the case to an early convalescence. But should it happen that after the tongue has

cleaned and become moist, the diarrhœa and tympanitis diminish, there is a sudden exasperation of these symptoms, the tongue, just rid of its coating, becomes red, smooth, and dry, with an increase of diarrhœa and tympanitis, subsultus tendinum, etc., then opium with camphor should be freely administered. Should there have been no abatement of the symptoms, but a gradual progression toward gravity, and to that condition especially in which there is a dry, brown, or red tongue, the opium and camphor are equally beneficial. For this peculiar condition of enteric fever, as represented by the state of the tongue, other remedies have been highly extolled, and some of them deservedly so. Oil of turpentine and argenti nitras are both capable of effecting much good when properly and timely administered. Of the two articles the oil is entitled to greatest credit. As already said, I have used both articles, and sometimes with marked advantage. For the relief of the same conditions for which the oil and argenti nitras is prescribed, I have also declared my confidence in the efficacy of opium. I repeat, when the condition of the brain will allow of its full employment, it is capable of effecting a most salutary change of these symptoms, and the success of the cases which have passed through my hands, under its influence, has established a confidence I can repose in no other remedy.

Third. *The Malignant Form.*—In this form of the disease our object is to assist nature in her final struggle. In those cases with a red and dry tongue, as they pass into this form, hemorrhage from the bowels not unfrequently follows; and in these cases I continue the opium in as large quantities as the patient can well bear, with a proper proportion of the sugar of lead. For hemorrhage from the gums and nostrils I like the employment of creosote;* this is to be used either by injecting into the nostrils, or pledgets of lint saturated in the solution and plugged into the nostrils;

* Solution prepared by G. W. Carpenter & Co., Phila.

for the arrest of bleeding from the gums it may be taken into the mouth and retained a few minutes, when properly weakened. For the arrest of diarrhœa, opium, alone or with chalk, argenti nitras, and the several vegetable astringents may be employed. If these means fail, injections of quinine and vinegar may be employed, and sometimes its effect is almost magical. If the bowels are not sufficiently evacuated, castor oil or rhubarb (the syrup of the latter is a good preparation) may be used. For the debility which attends this form, tonics and stimulants become absolutely essential; but in the allowance of these, the state of the pulse and the skin must be carefully considered. Washing the surface with brandy and water, and the internal exhibition of carbonate of ammonia, wine, and the sulphate of quinia, are eligible remedies. In some cases I have found it necessary to resort to pure brandy with quinine, and have witnessed the most gratifying results. Throughout this form of the disease the tr. verat. viride, in solution of chlor. potash, should be emyloyed. It is capable of effecting great good, and may be employed in doses of from three to six drops every three or six hours. I have already spoken of the value of opium as a stimulant. When the brain is not involved, it is *multum in parvo*, and in this form of the disease is of signal service. In connection with camphor I have seen it quiet delirium, induce moisture of the surface, reduce the frequency of the pulse, and cause it to increase in volume, and promote gentle sleep, from which indeed the patient awoke "quite a different person." Throughout the entire progress of the case the state of the bowels, as regards tenderness, should not be lost sight of, but wet and dry cupping, as the case may require, with the continued application of the poultices, and now and then the mustard-plaster, should be attended to. Blisters over the bowels I have seen attended with sufficient good to give them importance. For the relief of muscular twitchings valerian has disappointed me less often than any other article of its class. I mean the pow-

dered valerian in teaspoonful-doses every two or three hours. Retention of urine is a common occurrence. The importance of examining into the state of the bladder daily, has already been sufficiently stated. A tendency to the formation of eschars, from pressure, should not be forgotten. The parts exposed to pressure should be frequently washed with brandy, and the position of the patient as often changed. When obstinate delirium or coma exists, I have seen much advantage result from the timely application of a blister to the nape of the neck and the administration of a few blue pills.

In those cases that present the symptoms of malignancy in the beginning, the pulse full and strong, and obvious sanguineous determination to the brain, a moderate quantity of blood may be taken from the arm. But in the majority of such cases that have fallen under my management, I have preferred to trust to the effect of the *cold douche*, and thus far with entire satisfaction. As it is impossible for us to guess correctly the duration of any case of enteric fever, from any symptoms that may present, in the beginning, the general abstraction of blood should be cautiously practiced. But whether we bleed or not, it is important that the bowels should be thoroughly purged. Along with these cases, in the beginning, there is generally a torpid state of the bowels, and requires a larger dose than in the milder forms. In all these cases, if the patient be an adult, I give not less than twenty grains of calomel, followed, in due time, if it does not operate, by a dose of sulphate of magnesia or infusion of senna. During the first few days free cupping on the back of the neck, followed by a blister; if delirium is obstinate, cold applications to the head, a blue pill given at night, followed by a Seidlitz powder in the morning, is the course of practice I usually adopt, after which I omit the mercury and pursue the course of practice before described.—*Treaties on Enteric Fever.*

Bed-Sores.

Prevention and Treatment of Bed-Sores.—When the first blush of unhealthy inflammation makes its appearance (which is indicated by a livid color of the integuments) we should take care that all pressure from the parts be immediately removed. This can be done either by the patient's position being changed, or by the aid of bolsters or air cushions. M. Purefoi uses a cow's bladder softened in warm water; this being oiled and partially inflated, is placed under the part suffering from continued pressure. The effect of this support (in a case of fractured leg) exceeded his expectations.

What renders this contrivance valuable, is its simplicity and cheapness; it forms a very manageable substitute for the hydrostatic bed of Arnott.

In addition to these preventives, others, to stimulate the surface and excite the dormant capillaries to more healthy action, should be diligently used. The lotion recommended by Sir B. Brodie is admirable for this purpose. It consists of two grains of bichloride of mercury to an ounce of proof spirit. These two contrivances, if used at the same time will be found invaluable in the prevention of bed-sores.

If, in spite of our efforts, sloughing takes place, we may divide the progress of the case, for practical purposes, into three parts. The first is the period before the slough is detached, during which we must employ stimulating applications, as a carrot poultice morning and evening, sprinkled with a solution of chloride of soda. Pressure must also of course, be prevented.

When the slough falls out, a deep, unhealthy-looking ulcer is presented to our notice, forming the second stage of these sores. This ulcer is generally round or oval. The

integuments at the circumference are undermined, so that you can readily pass a spatula beneath them, showing that the subjacent cellular tissue has lost its vitality even to a greater extent than the cuticle. The margin of the ulcer is consequently found to overlap its base. The base presents a flabby, uneven surface without granulations, and interspersed with shreds of adherent slough. From this surface a thin serosanguineous or ichorus discharge is secreted, having a most fœtid odor. In order to promote healthy granulation, and stimulate the parts to cast off the remaining shreds of slough, warm dressings, consisting either of equal parts of gum elemi and spirits of turpentine or of castor oil and Peruvian balsam, may be applied, dipped in lint, to the bottom of the ulcer, and a linseed meal poultice, spongio-piline, or a carrot poultice, placed over them. After a few days, the ulcer will assume a more florid appearance, and show a disposition to form granulations. It will now be necessary to make a change in the dressings.

This should consist in applying every morning with a camel's-hair brush a solution of nitrate of silver (ten grains to an ounce of distilled water) to the flabby granulations, then covering the surface of the ulcer, and filling it up with fine carded cotton. A piece of oiled silk, large enough to cover both hips and sacrum, should then be placed over the dressings. The oiled silk thus applied serves a double purpose; it will, by preventing the evaporation of the discharge, keep the cotton soft, and permit its easy removal at each dressing; it will also add to the cleanliness and comfort of our patient, by preventing the bedclothes being soiled. Under this simple treatment, the surface of the ulcer soon begins to assume a more healthy appearance, the granulations at the margin become amalgamated with those at the base, until the cavity is filled up by luxuriant granulations.

We have now the third stage of these bed-sores to treat. As in the second stage our object was to stimulate the

surface to the healthy action, in this we have to control inordinate action, and repress luxuriant granulations. A concentrated solution of sulphate of copper (applied every morning) will be found most useful for this purpose. The carded cotton and oiled silk, as above recommended, may be also continued until the ulcer is perfectly healed.—*Part* xviii., *p.* 235.

Use of Collodion in Bed-sores.—Air-cushions and water-beds are not obtainable by the poor, and it has been the practice to protect parts subjected to injurious pressure either by powdering them with some inert substance, or covering them with diachylon. The first of these measures is of little use, and the other does more harm than good, as by softening the tissues to which it is applied, it only renders them more susceptible to the influence of pressure, especially if the leather on which it is spread gets into folds. Collodion adheres far more closely than diachylon, and is quite exempt from moisture; and in the cases in which it has been tried in the French hospitals, has answered well.—*Part* xx., *p.* 177.

Bed-sores—Tannate of Lead.—Mr. Leclerc, senior physician of the civil hospitals at Laon, indicates a method which is calculated to prevent mortification over the sacrum. As soon as the skin reddens or becomes painful, he prescribes a layer of tannate of lead in a humid state, to be spread over the threatened part, and the following is the formula for its preparation:

Corticis quercus contusæ, 1 oz.; aquæ, 8 oz.; reduce by boiling to 4 oz.; strain; add liq. plumbi diacetatis q. s. until no further precipitate is formed.

The deposite is collected upon a filter.

Mr. Leclerc asserts that of all the topical remedies which he has used for the treatment of this most troublesome complication of protracted disease, none is preferable to tannate of lead employed as described.—*Part* xxxix., *p.* 232.—*Braithwaite's Retrospect.*

Obstetrics.

Dysmenorrhœa.

Dysmenorrhœa may depend, says Dr. Bennet, on a physical imperfection of the uterine neck; on contraction of the os internum, or of the canal which constitutes the cavity of the cervix. This contraction may be either congenital, or the result of inflammation. The peculiar character of the dysmenorrhœa, when caused by congenital contraction, is the absence of *any* uterine symptom during the interval of menstruation, an intense agonizing pain for a few hours before the flow of blood appears, either then disappearing or lasting throughout the period; these pains commencing with menstruation in early youth. If they are occasioned by inflammation, there are the same symptoms at the time of menstruation, but there is not the same immunity from uterine symptoms in the interval of the catamenia.

The cause of pain experienced under these circumstances is evident. The cavity of the non-pregnant healthy uterus not containing more than about ten or eleven drops of fluid, as soon as the catamenial secretion commences from the lining membrane of the uterine cavity, unless the blood find a free exit through the os internum and the cavity of the cervix, it distends the uterus, and gives rise to great pain. The obstruction may merely be at the os internum, spasmodically contracted; in which case, as soon as it has been overcome, the blood escapes freely, and pain disappears. But if the os internum is permanently contracted, or the contraction exists in the cervical canal, the pain may continue throughout the catemenial period.

A contracted state of the upper part of the cervical canal, or of the os internum, is not, I believe, an unfrequent complication of inflammation of the cervix, from the swelling and hypertrophy of the substance of the organ which it occasions. This remark, however, does not apply to the *inflamed region* of the cervical canal, which is uniformly dilated by the existence of inflammation.

It appears to me that a free communication between the cervical and uterine cavities, allowing the *easy* introduction of the uterine sound, is generally an anomalous condition, indicating the existence of disease, unless observed soon after menstruation, when the os internum relaxes, or soon after parturition, when it has not yet had time to recover its normally contracted state. The principal morbid conditions in which I have observed a free communication between the two cavities, are inflammation and utèrine tumors. If the inflammation which exists at the os uteri, and in the lower part of the cervical cavity, ascends as far as the os internum, it appears to relax the muscular contractillity of that region. The os internum is always open when the inflammation passes into the uterine cavity, and implicates its lining membrane. The same effect is also produced by the development of the uterine cavity, through the formation of tumors in the substance of the uterus, or from any other cause, the os internum gradually opening as the uterus enlarges, probably by the same mechanism as in pregnancy. This is so generally the case, that the fact of the uterine sound penetrating easily through the os internum into an enlarged uterine cavity, may be considered a valuable symptom of the existence of such tumors, to add to those with which we are already acquainted.

Extreme dysmenorrhœa from congenital contraction of the cervical canal and os internum, independent of inflammation, is, I believe, of *rare occurrence*. This is a fortunate circumstance, as it is most embarrassing to treat, requiring an amount of interference with the uterine organs which it is very painful to have to propose to an unmarried female.

Dilatation of the contracted cervical canal is, however, sometimes the only means we have of remedying an amount of suffering at the catamenial period, so extreme as to render life nearly a burden, and as to react deeply on the general health.

Whatever may be the cause of dysmenorrhœa, the mode in which the menstrual secretion takes place is modified by its existence: instead of a flow of bright blood, regular and continuous, although generally increasing by exercise and diminishing by rest, we have a dark, interrupted, clotted discharge. After severe uterine pains, which may last many hours, and are often accompanied by tenderness and swelling in the ovarian regions, and pain in the back and down the thighs, more or less dark clotted blood is thrown out. Its expulsion is generally followed by relief, and by a freer flow for a while, when it again diminishes, and the same ordeal again takes place. Sometimes the interruption will be complete for one, two, or three days, the pains subsiding with the menstrual flux, and returning when it again makes its appearance. The venous condition of the menstrual secretion shows plainly that either from inflammation, congestion, or some other cause, the uterine circulation is defective, the blood stagnating in the vessels of the uterus, remaining in its cavity, and distending it after it has been secreted.

Treatment.—Constitutional dysmenorrhœa may be palliated in its attacks, and can seldom be removed by medical treatment. A great deal of subsequent uterine disease would, however, be spared to those young females who unfortunately present it, were mothers more generally aware that its existence constitutes throughout life a strong predisposition to uterine inflammation, and that they cannot take too great care of such of their daughters as suffer from it. For such young females, the discipline of public schools may be said to be nearly always too severe, and often to lay the foundation for much future physical and mental misery. That this must be

the case, will be easily understood when we reflect that the domestic treatment of this form of dysmenorrhœa consist principally in *rest* and *warmth*. Females who suffer habitually from dysmenorrhœa, whatever their age, should remain quietly at home, taking care to preserve themselves from atmospheric vicissitudes during the first day or two of menstruation, which is the period during which the pain is mostly felt. A warm hip-bath will often be found useful. If the pains are very decided, it is even best to confine the sufferer to bed, and to apply warm linseed poultices to the lower abdominal region—a valuable and simple mode of soothing pain.

Although this is frequently a symptom of uterine disease, we are often obliged to treat it as the chief disease. If warmth and rest fail, inject from 15 to 20 minims of laudanum, mixed with a little warm water, into the rectum: this is of more value than double the quantity by the mouth, and its disagreeable effects are avoided. If the first injection fails, or is not retained, a second, half an hour later, will be more successful. Chloroform, either inhaled or given in doses of 30 or 40 minims, mixed with mucilage or camphor, which favors its solution in water, is sometimes of use, though not so valuable as opiates.

It is the fact of dysmenorrhœa being so frequently caused by inflammatory disease, that explains the success which often attends blood-letting, both general and local, and which has induced so many authors to recommend it, although unaware of the pathological state which it relieves. General blood-letting acts by revulsion; whilst local blood-letting directly relieves the congested and embarrassed abdominal circulation. I seldom, if ever, resort to general bleeding in dysmenorrhœa.

A few leeches applied to the groin, or, better still, to the neck of the uterus, when possible, if the dicharge is scanty or temporarily arrested, is much more likely to mitigate the pain, and with less loss to the economy. Purgatives, which are frequently useful, act in the same way as leeches,

by depleting the abdominal circulation. Some authors, amongst others Dr. Gooch, have considered dysmenorrhœa to be frequently akin to rheumatism, and have recommended colchicum, guaiacum, and other medicines usually given in rheumatic affections. That the uterus may be the seat of such an affection, is undeniable; but I am persuaded that its frequency has been greatly exaggerated, as likewise that of irritable uterus. Indeed these two conditions may be said to have been, to a great extent, mere theoretical creations, destined to account for pathological conditions, the real nature and meaning of which have, until recently, been a mystery to the profession.—*Part* xxv., *p.* 294.—*Braithwaite's Retrospect.*

Puerperal Fever—Turpentine.

On a former occasion, Dr. Copeman, of the Norfolk and Norwich Hospital, recounted twenty-one cases of puerperal fever, for the purpose of showing that turpentine is more to be relied upon in this affection than any other remedy. On the present occasion, he records the history of thirty-six additional cases, in which the same plan of treatment was carried out with the same results. All these cases, new and old, were attended in consultation, and therefore it may be supposed that they presented some difficulties which induced the medical attendants and the friends to seek for further advice; and yet of the total number of fifty-seven, thirty-eight recovered, and only nineteen died. With such a result, without reading the cases, it might well be questioned whether the cases were really instances of

puerperal fever; but after reading them, such questioning is out of place. In all the cases, indeed, we find rigor, abdominal or uterine pain, uneasiness or tenderness, rapid pulse, disordered sensorium, tympanitic body, depraved lochial secretion—symptoms abundantly sufficient to show what was the matter.

The turpentine is given by draught (one drachm for a dose) or enema, or in both ways at once, and it is also applied as stupes to the abdomen. Simple water, or brandy and water, is recommended as the vehicle by which it may be most conveniently introduced into the stomach.—*Ranking's Ab., No.* 32.—*Summary of Med. Sci.*

Therapeutics.

Indigenous Remedies of the Southern Confederacy which may be Employed in the Treatment of Malarial Fever.

BY JOSEPH JONES, M. D.

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With our ports blockaded, and all commercial intercourse cut off with those foreign countries and American States from whence the South has received her supplies of medicine, it is important, and we may say absolutely necessary that the indigenous remedies of the Southern Confederacy should be carefully examined and employed. This examination and employment of Southern remedies should be commenced by the physicians not as a temporary expedient, but as a permanent advance in the establishment of our absolute independence. To facilitate this important object, we propose to pass in review the various remedies which may be employed in the treatment of the most common and important Southern diseases, reserving in the chemical analyses, physiological and therapeutic experiments, with these and other remedies, for subsequent papers.

GEORGIA BARK (PINCKNEYA* PUBENS) MICHAUX.

Botanical Characters.—Capsule two celled, bearing the partition in the middle of the valves. Corrolla Tubular. Calyx, with one or two segments resembling bracteas. Filaments inserted at the base of the tube. Seed winged.

*Consecrated by the Elder Michaux, in testimony of his gratitude and respect, to Charles Cotesworth Pinckney, of South Carolina, an enlight-

A large shrub, 15–20 feet high, with many stems from each root; branches branchiate; the younger tomentose. Leaves, opposite, large, lanceolate, entire, slightly acuminate, shining on the upper surface, though sprinkled with hairs, tomentose on the lower; petiole about an inch long, tomentose. Panicles terminal and axillary, composed of fascicles, commonly 5 flowered. Calyx superior, 5 parted; persistent, slightly colored; segments sometimes equal, lanceolate and acuminate; frequently one and sometimes two segments dilate into a large, ovate, veiny, rose-colored leaf; when two segments dilate they are never equal in size. Corrolla tubular; the tube of an obscure green color, tomentose; border 5 parted; segments oval, obtuse, purple. Filaments inserted into the base of the corolla, longer than the tube. Anthers incumbent, two celled. Germ turbinate. Style shorter than the stamens. Stigma obtuse. Capsule nearly globose, opening at the summit across the dissepiment. Seeds flat, orbicular, attached to a central receptacle. This genus is very nearly allied to cinchona. It differs in its calyx, but principally by the transverse partition of its capsule. Flowers May and June.—Elliott. A sketch of the Botany of South Carolina and Georgia, vol. 1. p. 268.

Geographical Distribution.—This small tree, interesting not only for the elegance of its flowers and foilage, but also for its close affinity to the celebrated genus Cinchona, which yields the Peruvian bark, and for the valuable medicinal properties of its bark is indigenous and confined to the most southern parts of the Southern Confederacy. It grows in wet and boggy soils, along the small streams which intersperse the pine barrens, from New River, South Carolina, along the sea coast into Florida. I have found it in great-

ened patron of the arts and sciences, from whom Michaux received multiplied proofs of benevolence and esteem during his residence in South Carolina. First discovered by Bartram, who considered it a species of Mussenda. Found for the first time by the elder Michaux, in 1701, on the banks of the St. Marys.

est abundance in the "branches" of Walthourville in Liberty county, where it is found in company with the elegant Buckwheat Tree (Mylocarium ligustrinum Pursh,) several of Andromeda, (Andromeda Angustifolia Pursh) A. Catesbæi, Walt. A. acuminata,) Hypericum fasiculatum, Poison bush, (Rhus vernix,) Tupelo (Nyssa aquatica and N. grandidenta) Black Gum Nyssa) sylvatica,) Red Maple, (Acer rubrum,) Cypress (Cupressus desticha,) Small Magnolia or White Bay, (Magnolia glauca, Loblolly Bay, (Gordonnia lasyanthus,) Red Bay, (Laurus Caroliniensis,) Sweet Gum,) Liquidambar styraciflua) and Water Oak, (Quercus aquatica.) The branches which intersect the Pine-barrens of Georgia are capable of supplying large quantities of this important medical plant, and with care and assistance of cultivation, they might be made to yield sufficient bark to supply the entire Confederacy. If this plant fulfills its high promise, these barren and now valueless regions of country, will yield one of the most valuable remedies.

Chemical and Therapeutic Properties.—The inner bark of the Pinckneya pubens is extremely bitter and appears to partake of the febrifuge virtues of the Peruvian bark. Mr. Farr, an able chemist of Philadelphia, many years ago instituted an analysis of this bark, which although by unforseen accidents was not as satisfactory as he would have wished it, still led to the discovery of a crystalized substance which resembled Cinchona. Previous to the extensive introduction of Bark and Quinine, the inhabitants of Georgia and Carolina employed it successfully in the treatment of intermittent fevers.

Mr. John Stevens Law,* of Sunbury, Georgia, in his Thesis for the Degree of Doctor of Medicine, presented to the Faculty of the University of Pennsylvania in the spring of 1825, states that he was induced to try it in intermittent

* The American Dispensatory, by John Redman Coxe, M. D.; Philadelphia, 1830, p. 499.

fever, from the estimation in which it was held by some of the inhabitants of the neighborhood where he resided.

Mr. Law used it in seven cases of intermittent fever, six of which were very speedily cured by it. He affirms that in no case did it distress much the stomach, though in two cases it was given in the quantity of ʒ i at a dose, after the custom of the West Indian physicians.

This bark may be administered in powder, in doses varying from ʒ i to ʒ i, according to the severity of the case; it may also be administered in infusion or decoction. Michaux* states that the inhabitants were accustomed to boil a handful of the bark in a quart of water till the liquid was reduced to one-half, and to administer this decoction to the sick.

The facts now presented, with reference to this interesting vegetable, which so closely resembles the celebrated Peruvian Bark, that it has by several distinguished botanists been referred to the same genus, are sufficient to excite, but by no means to satisfy inquiry; and we sincerely hope that physicians will make extensive examinations and trials, in practice, with this Georgia Bark, which, aside from the reputation which it formerly held in the cure of malarial fever, promises so much for its botannical connections.

DOGWOOD (CORNUS FLORIDA.) LINN.

Bottonnical Characters.—Arborescent; leaves ovate, acuminate; involucrum large, obcordate; drupes ovate.

A tree 15–25 feet high, the trunk 8–10 inches diameter, with expanding branches, the smaller crowded at the extremeties of the older.

Wood, fine grained, hard, durable. Leaves opposite, deciduous, ovate-lanceolate, acuminate, entire, ribbed; the younger ones very pubescent, almost villous on the under surface. Flowers in terminal heads. Involucrum four-

* North American, Sylva, vol. 1, p. 131., Philadelphia, 1857.

leaved; leaves large, obcordate, nerved, white; the sinus callous, sessile at the base of each head, and enclosing it before the time of flowering. Calyx one-leaved, small, tubular, border four-cleft; segments erect, obtuse, shorter than the tube. *Petals* 4, linear-lanceolate, inserted into the summit of the germ, yellowish. *Filaments* 4, as long as the corolla, alternating with the petals. *Anthers* incumbent, two lobed. Germ inferior, slightly angled. Style shorter than the stamens, surrounded at base by a glandular ring, round which the petals and filaments are inserted. Stigma capitate. Drupe red. Flowers March, April.—Elliot. Sketch of Botany of South Carolina and Georgia, vol. 1. pp. 207–208.

Geographical Distribution.—The Cornus Florida is first seen in Massachusetts, between the 42d and 43d degrees of latitude, and extends uninterruptedly throughout the eastern, southern and western states to the bank of the Mississippi. Although abounding especially in the Middle States, it is, nevertheless, one of the most common trees over this vast extent of country. In New Jersey, Pennsylvania, Maryland and Virginia, it abounds upon moist, gravelly and uneven soil, in North Carolina, South Carolina, Georgia, Florida and Alabama, it is generally found more abundantly and most luxuriant on the borders of swamps and low-grounds, and scarcely ever in the pine barrens, where the soil is too dry and sandy to sustain any but the long leaf Pine, (Pinus Australis,) the Barrens Scrub Oak (Quercus) Catesbæi, Upland Willow Oak, (Quercus cinerea,) Black Jack Oak, (Quercus ferruginea,) and Running Oak, (Quercus pumila.)

In the most fertile districts of West Tennessee and Kentucky it is said not to appear in the forest, except where the soil is gravelly and of middling quality.

Chemical Composition.—The bark of the root, stem and branches of the Cornus Florida is a powerful bitter possessing a bitter astringent and slightly aromatic taste. The chemical composition of this bark appears to have been

first investigated by Dr. Walker, of Virginia, who published his observations in 1803 in Philadelphia.* He found that water distilled from the bark in powder had a transparent, whitish appearance, with a slight aromatic odor, and no perceptible taste; when the heat was increased the fluid had a lemon color, with an unpleasant smell, and an acerb taste effects which were probably caused by the volatilization and partial decomposition of portions of the bark in consequence of the continuance of the heat until the mixture was evaporated nearly to dryness.

Dr. Walker also endeavored to ascertain the effects of different menstrua upon the extract furnished by evaporating a decoction of the root of Cornus Florida. Strong alcohol dissolved from the extract, three-fourths of the entire quantity; the part which remained undissolved was destitute of taste, and underwent no change of color on adding the test of iron; the alcohol which contained the dissolved portion of the extract possessed an intensely bitter taste with astringency, presented a clear red color, and turned to a deep black on the addition of a salt of iron. When the alcoholic extract was macerated in repeated portions of sulphuric ether, with a view to ascertain the quantity of resin, the ether acquired a dark color and a bitter taste, and dissolved three-quarters of the extract. When tested with iron, it was found that the remaining quarter, only, was changed to a black color.†

Upon this examination, Dr. Walker announced that the Dogwood contained gum, resin, tannin and gallic acid.

Mr. G. W. Carpenter, of Philadelphia,‡ subsequently

* Experimental inquiry into the similarity in nature between the Cornus Florida and Sericea, and the Cinchona Officinalis of Linnæus, &c., &c., by Dr. John M. Walker. Philadelphia, 1803.

†Dr. Walker gives a receipt for making an excellent ink, in which the bark of the Cornus Florida is substituted for gall nuts.

Put half an ounce of dogwood bark, two scruples of sulphate of iron, and two scruples of gum arabic in sixteen ounces of rain water, during the infusion shake it repeatedly.

‡Essays on some of the most important articles of the Materia Medica, &c. By G. W. Carpenter. Philadelphia, 1804, p. 202.

announced the discovery of a peculiar bitter principal for which he proposed the name Cornine, and which he asserted to be the active alkaloid principal of the Cornus Florida, and to be fully equal, if not superior to quinine in its tonic and febrifuge properties.

In consequence, however, of yielding this salt in so very minute comparative proportion to what the Quinine is yielded by the Cinchona, it is even more expensive than the latter. It is greatly to be regretted that Mr. Carpenter did not publish the method by which he extracted the alkaloid principle. Some have gone so far as to affirm that he did not discover any alkaloid principle at all, because subsequent investigations have failed to detect Cornine. We consider this criticism severe, for three reasons.

1st. No absolutely accurate and complete examination of the bark of the Cornus Florida has yet been made.

2d. As Mr. Carpenter did not state his method of obtaining the active principle, it might be supposed that the agents used exerted some influence in the transformation as well as the separation of the alkaloid principle.

3d. Mr. Carpenter affirms that he submitted Cornine to the examination of several physicians. This subject is of so much interest and importance that we quote the entire passage from the work of Mr. Carpenter:

"It gives me much pleasure to announce the discovery which I made of an alkalin base in the Cornus Florida, which I have denominated Cornine, and which with acids, form neutral salts, the sulphate of which has proved a highly valuable tonic and febrifuge. This article has been very carefully and accurately described by Dr. Samuel G. Morton, of this city, in the Philadelphia Journal of the *Medical and Physical Sciences*, and from the most respectable sources in the medical profession, from various parts of the United States, where this article has been sent, the most corroborating evidences have been received of the unequivocal success of the Cornine in the treatment of remittent and intermittent fevers, in the same doses as the quinine,

and the only circumstance which precludes its competition with that substance, is the minute comparative proportion of Cornine yielded by the Cornus Florida. If, however, at any time, we should fail in our supplies of Cinchona, which is not impossible, or even improbable, we shall then be able to supply its place by this principle of the Cornus Florida." Essays on the most important articles of the Materia Medica, &c. p. 203.

Dr. S. G. Morton,* of Philadelphia, described Cornine as a greyish-white powder, extremely bitter and deliquescent when exposed to the air, and affirmed that he had exhibited it in some cases of intermittent fever with much success. Dr. Morton considered it to be in no respect inferior to quinine. Dr. R. Coates, and several other practitioners, exhibited this salt in the same cases in which quinine is employed, and with decided success.

Cornia, according to Mr. Carpenter, does not crystalize but forms on evaporation a viscid mass. It is of a pale, straw color, attracts the moisture of the atmosphere, and dissolves in alcohol, and in sulphuric, acetic and muriatic acids, with which it forms crystallizable, neutral salts. The Sulphate crystallizes in acicular or needle-like cystals, deliquescent, and consequently soluble in water, or of a greyish-white color, and its taste is intensely bitter. According to the testimony of Joseph Tongo,† M. D. and E. Durand, of Philadelphia, Dr. Staples obtained it by digesting the bark of the root of the Cornus Florida in alcohol of 30 deg. of Baume's areometer. After several days had elapsed, the latter was filtered and concentrated by distillation in water bath. On cooling, a granular extract was obtained, of a light pink color, of a very bitter and astringent taste; when treated with diluted sulphuric acid,

* Philadelphia. Journal Medical and Physical Sciences.

†A Manual of Materia Medica and Pharmacy, comprising a concise description of the articles used in Medicine by H. M. Edwards, M. D., and P. Vavasseur. M. D. Translated from the French by Joseph Tongo, M. D., and E. Durand, Philadelphia. 1829.

afforded a very small quantity of cystals of Sulphate of Cornia, without having been exhausted of all its bitterness and astringency.

Mr. Ellis states that Dr. S. Jackson, lately of Northumberland, Pa., informed him that he had subjected the bark to Henri's process for obtaining Quinia from Cinchona, and that without carrying the process so far as to obtain a cystalline salt, he used the concentrated alcoholic solution with the most decisive results, and was satisfied that it contained a principle analogous to Quinia.

Mr. James Cockburn examined the Cornus Florida in 1835, with the following results:

The decoction, which was of a bright red color, and slight mucilaginous appearance, formed a precipitate with a solution of subacetate of lead, which consisted of gum, coloring matter, and other foreign substances. A precipitate was also formed with pure alcohol.

Upon the addition of water to the tincture, concentrated by evaporation, it threw down a curdy precipitate, which upon examination, was found to be resin.

The decoction and tincture, redden litmus paper, and cause a yellowish precipitate in a solution of gelatine, and one of a dark olive green in a solution of sulphate of iron. They also afford precipitates with sulphuric and muriatic acids, lime water, alumina, the carbonates of ammonia and potassa, tartrate of antimony and potassa. The color becomes lighter on the addition of nitric acid; milky by the corrosive chloride of mercury, and has its color deepened by ammonia.

A portion of the bark was digested in sulphuric ether for a few days and filtered.

The etherial tincture was of a lemon color and reddened litmus paper, and on evaporation deposited on the sides of the vessel a fatty matter, insoluble in water, but soluble in alcohol, leaving a greasy stain on paper; besides this there was a compound of oil and resin combined with coloring matter, and a substance of a light brown color, very bitter

taste, friable and very regular appearance, supposed to be a compound of a peculiar bitter principle, with tannin and other matters. This was dissolved in alcohol and formed a beautiful red-colored tincture, which reddened litmus paper. Lime was then added, boiled, filtered and evaporated; a substance resembling the etherial residue remained, interspersed with small, shining acicular crystals, of a bitter taste, which property I am disposed to believe they owed to the bitter extract with which they were associated. The bark used in the last experiment was submitted to the action of boiling ether, which, on cooling, deposited a substance of the consistence of wax, which it resembled in all its properties.

Two ounces of the bark coarsely powdered were introduced into ʒ viij of alcohol and exposed to a temperature of from 105 to 120 degrees F. The alcohol was then decanted and a fresh portion added and treated as before. The liquors were united and a solution of sub-acetate of lead added to separate the coloring matter; after the insoluble portion subsided, the clear liquor was separated, a little sulphuric acid was then added to the solution to separate any excess of sub-acetate of lead. This was filtered, and the alcohol distilled off. There remained in the retort an oily-like substance, together with a principle of a dirty, white color, curdled appearance, resembling the residue of the etherial tincture. Ammonia was then added to the liquor to precipitate any principle remaining in solution. The residue was then treated with a little sulphuric acid, water and animal charcoal, (previously treated with muriatic acid, which, upon evaporation, deposited an abundant crystalline mass of a flaky appearance, resembling at first sulphate of quinine, but on cooling, assumed a feathery appearance, with a sharp saline taste, soluble in hot and cold water, insoluble in alcohol and ether, soluble in nitric acid, and resembles sulphate of ammonia in all its properties.

One pound of coarsly powdered bark was boiled for half

an hour in one gallon of water, acidulated with ʒ iss sulphuric acid. The tincture was poured off, and treated with animal charcoal, and when evaporated, left a brown extract of a resinous, waxy appearance and very bitter taste, which appeared to have very much the flavor of Peruvian bark; this was again treated with animal charcoal, and left, on evaporation, a crystalline mass in an impure form, which was slightly soluble in alcohol, almost insoluble in ether, but very soluble in nitric acid. The alcoholic solution was evaporated, and left crystals of a very fine, long, flexible and silky appearance; which crystals decomposed when thrown upon red coals, and did not form a precipitate with oxalate of ammonia, but were without taste.

The bitterness was entirely owing to the bitter extract which was slightly soluble in water, soluble in alcohol, but nearly insoluble in ether. This I propose to call bitter extractive, and in this I am inclined to believe the active principle resides.

A concentrated tincture yielded by evaporation a dark brown extract, slightly soluble in water, soluble in alcohol and ether, bitter aromatic taste, possessing the properties resin. Both this and the watery extract possessed the sensible properties of the bark in a concentrated form.

There is a red coloring principle in this bark, taken up very feebly by alcohol and ether, but less so by water, and has its color rendered deeper by an alkali.

One thousand grains of the bark yielded by incineration a product weighing sixty-five grains: this residue was submitted to the action of boiling water, and concentrated by evaporation; it then had an alkaline taste, effervesced strongly with acids, and restored the blue color to litmus, previously reddened by an acid; it was then neutralized with nitric acid, and upon evaporation yielded crystals of nitrate of potassa.

The insoluble residue of the preceding experiment was dissolved by nitric acid, (with the exception of a minute portion of carbonaceous matter) with violent effervescence;

the colorless solution thus obtained, threw down a white precipitate, on the addition of oxalate of ammonia, and a deep blue one with ferrocyanate of potassa. It produced also a dark green or black, with tincture of galls. Carbonate of soda when added to the solution, caused a white flocculent precipitate. On adding a solution of phosphate of soda, no change was immediately produced, which led to the belief that a salt of magnesia was present.

From the result of these few and imperfect experiments, we may venture to enumerate the following as among the principal constituents of the Cornus Florida.

1, Gum; 2, Resin; 3, Tannin; 4, Gallic Acid; 5, Oil; 6, Fatty Matter; 7, a Crystalline substance; 8, Bitter Extractive; 9, Wax; 10, red coloring matter; 11, Lignin; 12, Potassa; 13, Iron. To which may be added, Salts of Lime and Magnesia. Cornus Florida, by James Cockburn, Jr. Extract from Thesis. Phil. Coll. of Pharm. American Journal of Pharmacy, July, 1835, new series, vol. 1. pp. 109–114.

Dr. C. D. O'Keeffe, whilst a student of medicine in the Medical College of Georgia, published a valuable article on the chemical constitution and febrifuge properties of Dogwood Bark; in which he states that with the assistance of Dr. Robert Campbell, he had determined upon and conducted the following process for obtaining Cornine:

Pulverize two ounces of the well-dried bark of the root; separate its tannin with sulphuric ether, and filter. Macerate the separated bark in alcohol for two days, to extract the resin and cornine. Pour off the alcohol, and precipitate the *cornine* from the liquor with a solution of sub-acetate of lead. Separate the sub-acetate of lead from the solution by passing a current of sulphuretted hydrogen gas through it. Filter and evaporate the fluid down to the *cornine*.

This substance is possesed of decided acid properties, having a well-marked acid reaction; it is of a dark straw

color, very bitter and astringent. Southern *Medical and Surgical Journal*, January, 1849, p. 6–7.

Dr. O'Keeffee cites the testimony of Prof. Geiger of Heidleberg, as confirmatory of the results of his examination as the acid properties of *cornine*.

It is evident from the discrepancies in the statements and views of these various observers, that the analyses of Dogwood, thus far published, are not sufficiently thorough and accurate, and that the profession needs more extended and definite information with reference to the chemical and physical properties of this valuable indigenous plant.

Medical Properties and Uses.—The bark of the Dogwood has been known and successfully used in the treatment of intermittent fever for more than one hundred years.

Upon the human body the bark of the Cornus Florida acts as a tonic, astringent and antiperiodic, and resembles in its general effects Peruvian bark. Dr. Walker by numerous experiments with it upon the healthy system, determined that it uniformly increased the force and frequency of the pulse, and augmented the heat of the body. He instituted collateral experiments with the Peruvian bark, and found that both its internal and external effects agreed with those of the Cornus.

Dr. Gregg, of Bristol, Pennsylvania, states that after employing the Cornus Florida for nearly twenty-three years in the treatment of intermittents, he was satisfied that it was not inferior to Peruvian bark; and that he had found it uniformly beneficial as a tonic in cases of debility. Among the number of cures by this medicine was that of his own case. Dr. Gregg estimated thirty-five grains of it equal to thirty grains of Peruvian bark; and observed that the only inconvenience accompanying its use was, that if taken within a year after being stripped from the tree, it sometimes occasioned acute pains in the bowels; but this evil was remedied by adding to it five grains of Virginia Snake Root, (Aristolochia serpenta-

ria.) He recommends the bark as being in the best state after it has been dried a year.

In an intermittent fever which prevailed many years ago in West Jersey, it is said to have proved, generally speaking, more beneficial than Peruvian bark.

Drs. Jacob Bigelow, S. G. Morton, R. Coates and many other medical men have employed this bark with advantage in intermittents and in debilitated states of the system, accompanied with loss of appetite and indigestion.

I have myself used it with good success in the treatment of our climate fevers.

In the southern part of Georgia I have known the planters to employ it extensively amongst their people in combination with Wild Cherry bark and Wild Horehound, (Eupatorium pilosum,) not only in the treatment of intermittent fever, but also in colds and dropsies, and in all cases of debility, accompanied with loss of appetite and indigestion.

Dr. B. S. Barton states that a decoction of the Dogwood bark was found very useful in a malignant disorder of horses, called "yellow water."

Dr. D. C. O'Keeffe, in the articles previously referred to, gives an interesting account of the physiological as well as the therapeutic action of the extract of dogwood, and supports his views by fifteen accurately detailed cases of intermittent fever.

In order to ascertain with precision the effects of large doses of the extract on the system in a physiological state, Dr. O'Keeffe instituted the following experiment upon himself.

10 A. M. First dose 30 grains ext.; pulse previous to taking it, 72.

11 A. M. Second dose, 30 grains; pulse intermittent, 72–76; temperature of surface somewhat augmented; general perspiration; a sense of fullness and slight dull pain over the frontal eminence, much increased on flexing the head forward and downward; uneasy feelings in the stomach and bowels.

12 M. Third dose 30 grains; pulse 76, not intermittent

but somewhat depressed ; sensation in the head uniform. On taking this dose a sense of warmth was felt in the stomach, and radiated over the surface of the trunk.

1 P. M. Fourth dose 30 grains ; pulse 76 and regular; pain in the head augmented, and extended down the forehead to the eye-lids, with a disposition to sleep; slight oppression in the precordia.

Eating dinner neither mitigated nor heightened the dull headache, which continued the same throughout the day; at night, tendency to sleep much more urgent—retired early, slept well during the night, and arose in the morning free from any uneasy sensation whatever.—*Southern Med. and Surgical Journal*, Jan. 1849, pp. 10–11.

The discrepances between the effects observed by Dr. O'Keeffe and Dr. Walker may have been due to the fact that the former used the extract and the latter the bark; be this as it may, it is nevertheless true that the profession needs an extended series of experiments upon the action of the various preparations and constituents of the Cornus Florida. Until these data are supplied itwould be worse than useless to attempt any critical analysis and description of its physiological effects.

Dr. O'Keeffe not only substitutes the testimony of various physicians to the great value of Dogwood in the treatment of malarial fever, but he also establishes the fact that the extract has no tendency whatever to disturb the stomach and bowels. This is important, for the alledged tendency of the Cornus to disturb the stomach and bowels mentioned by so many writers, has exerted no little influence in causing this valuable remedy to remain neglected.

According to Mr. Carpenter the Cornus Florida yields a beautiful extract resembling very closely that of Cinchona, differing, however, in its sensible character, from the extract of the superior species of Peruvian bark, by being less bitter and more astringent.

The following is the most eligible mode for preparing this extract:—Evaporate in a sand or water-bath a tincture of the bark made by digesting it in proof-spirits in the

proportion of two ounces of the former to a pint of the latter, suffering it to stand for at least a week before straining; occasionally during this time submitting it for a few hours to a moderate heat, and thereby facilitating the solution. This extract, from its most prominent and sensible characters, is unquestionably much more active than the common extract of Carthagena bark, and is a preparation admirably adapted, in all cases, where the Cornus may be employed with advantage; and in consequence of being a concentrated preparation separated from the ligneous and insoluble portions, and containing less gum and mucus matter, (which constitutes so large a portion,) is certainly much preferable to the crude substance, and no doubt will be resorted to by many country practitioners as a useful expedient, particularly in those places where this article is in profusion, and where bark of a good quality is frequently very scarce, and sometimes even unknown.—Essays on Materia Medica, &c., by W. P. Carpenter, pp. 203–204.

The extract thus prepared has been exhibited with success by several practitioners in the same doses as the alcoholic extract of Cinchona.

Dose of Extract of Cornus Florida from gr. x. to ʒ ij. repeated as often as the case demands.

Dose in powder from 20 to 30 grains, to be repeated according to the circumstances. It may also be given in decoction, made with an ounce of the bark to the pint of the water, of which the dose is from an ounce to two ounces.

In some parts of the country the ripe berries infused in brandy, have been used as bitters; and the infusion of the flowers are said to form a good substitute for chamomile tea. A decoction of buds and twigs has been thought to agree better with weak stomachs than the preparations.

CORNUS CIRCINATA. WILD. (ROUND LEAF DOGWOOD,) AND CORNUS SERICEA. WILD. (SWAMP DOGWOOD.)

The ten species of Cornus, indigenous to the United States and Southern Confederacy, are all supposed to pos-

sess similar medical properties. With the exception of the Cornus Florida the two under consideration have been most carefully investigated. Our knowledge, however, of both their chemical and medical properties is not only more imperfect than that of the Cornus Florida, but is vague and meagre. Professor Morson and Dr. Ives appear to have been the first to introduce the Cornus Circinata into the medical practice. They recommend it very highly for its astringent and tonic properties, and affirm that they have successfully used it in intermittent fevers and dysentery. Mr. Carpenter announced that the alkaloid principle, Cornine, exists also in this species of Cornus.

The alcoholic extract appears to be the most eligible mode of using this article. The extract is prepared in the same manner with that of the Cornus Florida, it possesses more astringency and is therefore better adapted to the treatment of dysentery. As this plant appears to be rare in most of the Southern States, it is not likely that it will ever be extensively employed, especially as the Cornus Florida is not only more abundant but also fully as efficient. The bark of the Cornus Sericea (Swamp Dogwood,) was found by Dr. Walker to be equal to that of the Cornus Florida, and but little inferior to the common pale Peruvian bark, in the treatment of intermittents. It forms a beautiful tincture with proof spirits.

As the Swamp Dogwood inhabitants the North American continent from Canada to Florida, growing in moist woods, in swamps, and on the borders of streams, especially in the mountains, it is well worth the attention of the physicians of the Southern Confederacy.

The doses and modes of preparation and administration are the same with those of the Cornus Florida.

PERSIMMOM (DIOSPYROS VIRGINIANA.) MICH.

Breckel in his "History of North Carolina," says that the inner bark has been used with success in intermittent fever. As far as our information extends, this interesting

statement remains to be verrified. It is well known that its tonic and astringent powers have proved exceedingly valuable in the treatment of affections of the bowels,* hemorrhage and ulcerated sore throat†; there are many stages and complications of the different forms of malarial fever, where these tonic and astringent properties would fill most important indication; for malarial fever, as is almost always the case in China, is frequently accompanied with derangements of the bowels.

CATALPA. (BIGNONIA CATALPA.) LINN.

In a thesis supported at the Medical Department of the University of Pennsylvania, the bark of the Catalpa was maintained to be tonic, stimulant and more powerfully antiperiodic than the Peruvian bark. I have been unable, after careful research with the best authorities to find any facts which bear either upon the chemical constitution, or the tonic, stimulant and antiperiodic properties of the bark of the Catalpa. Physicians should exercise caution in their experiments with it, because it is generally believed to be poisonous. When the bark is wounded a very unpleasant, and according to the testimony of some, a poisonous gas is emitted; and it has been stated, on good authority, that honey collected from its flowers is poisonous, producing effects analogous, though less alarming, than those produced by the honey collected from the Yellow Jasmine of Carolina.

The seeds have been employed by several practitioners of continental Europe in asthma.

M. Automarchi recommends for this purpose a decoction made by boiling twelve ounces of water with three or four ounces of the seeds down to six ounces, the whole to be given morning and night.

*On the use of the unripe fruit of the Diospyros Virginiana, as a therapeutic agent. By John P. Mattauer, M. D., of Virginia. The American Journal of Med. Sci. October, 1842, p. 297. American Jour. Pharm. xii, p. 161. Woodhouse, Inaug. Diss.

† Dr. B. S. Barton's Collections. 11.

Medical Staff of the Army.

A Plea for the Medical Staff of our Army.

To the Editor of the Richmond Examiner:—

Having spent the past summer in and around Richmond, observing the progress of the mighty struggle going on between the North and the South, and occasionally visiting the encampments of our men from the seaboard up to the mountains, I often found much pleasure as well as instruction in reading the racy, spirited and able editorials of the Examiner. On returning home I missed the pleasure so much that I determined to become a subscriber to the paper, and did so. It happened that the first number that reached me (October the 1st) contained an editorial on the hygiene of camps and the prevailing sickness in our armies, displaying so great a lack of correct information in regard to the subjects treated of, and withal, such unjust and unkind reflection on the Medical Staff, that I felt strongly inclined to seize my pen at once and attempt to defend my unappreciated and much-abused profession; but my attention became otherwise engaged, and I had almost ceased to think of it, when your number of the 18th came to hand. This impelled me to offer you a communication, feeling confident that the bold and patriotic spirit which prompts you to expose and denounce error and abuses wherever found, will, at the same time, induce you to cheerfully receive admonition in regard to any error you may fall into yourself. I shall review your papers as they come out, and if I should find occasion to expatiate, and even indulge in some apparently harsh expressions, I trust that neither you nor any others who may be alluded to will impugn my motive and object. Thank God, liberty of

speech, and of the pen, has not yet been wrenched from us in the South by the hand of tyranny, and I claim the right of a private citizen to express his opinion freely, but respectfully, of the acts of all public officers, from the highest to the lowest.

You open your first paper with the remark—"the hygiene of the camps is the most difficult problem of the war"—an assertion which I shall not deny, though it would certainly appear to be no means *unquestionable*, judging from the small amount of attention devoted to it by our Government. You go on to say, "innumerable essays have appeared in the newspapers on the subject—receipts and admonition, and advice have been thrown before the public and thrust upon the soldier—these have all had abundant time to be heeded and practiced upon; still the sickness goes on." I can only express surprise that a sensible man would expect much benefit to result from the greater part of the articles alluded to, in the newspapers of the day. That is not the best place to look for either sound medical knowledge or wholesome medical advice.

Admitting, as you do, that we certainly have a great deal of sickness in the camps—more than the Yankees have in theirs—you say, "the inquiry is, what is the reason of this frightful prevalence of sickness in our camps?" In your effort to answer this important question you say "it will not do to ascribe it to the tents; nor to filthiness or want of cleanliness in the camps; nor to the soldiers' diet ('fried dough,' for instance,) nor to the use of fresh or salt meat exclusively;" because all these supposed causes are sometimes found to exist, but without attendant sickness. You then bring yourself to the following sage conclusion—"The sickness would therefore seem to be owing to one of two causes, probably to both; either to the fact that the medical staff of the army is deficient in professional science and skill, or to another fact which will be stated in the sequel."

That "other fact" must be *measles*, as there is nothing

else mentioned as a cause of sickness in the sequel. We are certainly indebted to the able editor of the Examiner for thus simplifying "the most difficult problem of the war," and tracing the greatest evil under which we have labored to one or both of only two causes—*medical incompetency and the measles*—both of which are easily comprehended, and fortunately, to a considerable extent, within reach of correction. Let us now examine the demonstration of the learned ætiologist. You commence by saying, "It is but little creditable to the medical staff of the army that so little certainty exists as to the cause of the extraordinary sickness—that disease may very often be beyond the reach of medical science; but if the faculty are incapable of ascertaining the causes and devising the preventives of it, we should think that there would be little hope of their successful treatment of disease after its development." You would thus hold the profession responsible for the evil on account of its culpable ignorance of the cause. Now I would respectfully ask whether you are perfectly sure that "so little certainty" does actually exist on the point in question? I confess I had been under the impression that the most common cause of army disease had been pretty well ascertained, and that the preventive measures which have been devised by able and experienced army surgeons, when properly attended to by Governments and enforced by commanding officers, had been productive of most beneficial results. The history of modern warfare certainly sustains the correctness of this impression; yet it seems not to be appreciated by many Governments, and among them ours in particular.

I am sorry to perceive that our young Confederacy has inherited this defect from the old Union, as that did from the mother country; which, although perhaps the most enlightened and powerful Government in the world, was always far behind its spirited rival across the channel in its provision for securing the health and comfort of its armies in the field. The contrast between England and France

in this respect was prominently displayed in the late Crimean war, when they were fighting side by side against a common foe. The great Napoleon was fully aware of the importance of this point. He made his surgeons investigate the causes of disease in armies, and enforced the preventive measures devised by them. He found his reward in the preservation and gratitude of his soldiers. His noble example is strictly followed by his illustrious successor at the present day, who, when he sets his armies in motion, provides them with everything that is necessary for their health and comfort, and enforces every measure that has been found useful as a preventive of disease.

Think you that all this is unknown to the medical staff of our army?

If you do, you are very much mistaken. But what would be the use of this valuable knowledge of the causes and prevention of sickness, if our Government attach no importance to it, nor makes any provision for rendering it available? If any one has visited the different divisions of our army, as I have done, and inquired particularly into the provision made by the War Department for the injuries and sickness usually incident to war, methinks he cannot have avoided the conclusion that our Government must consider its soldiers alike *invulnerable and incapable of getting sick.* I am alluding now to the provisions of medical and surgical materials, and not to the qalifications of the Medical Staff. You, Mr. Editor, seem bent on fixing the evil complained of on this body. You acknowledge the indebtedness of the whole human family to medical science "for the almost total extinction of small pox," which is true; and "for the suppression of cholera and the discovery of many specifics for its treatment," which, unfortunately, is not true. You confess obligation for "our security from many afflicting and decimating scourges to the skill, genius, searching investigation and eminent learning of the Faculty of generations preceding that to whom, now, the health and lives of our community and

families are trusted;" but you add, "whatever panegyrics may be pronounced upon the science itself, or eulogies be employed in honor of eminent men of the profession, not now in practice, there is reason to fear that the medical staff intrusted with the hygiene of our armies are at fault, either as to their qualifications or their attention to duty." * * * "The extent of sickness is so great as to cry aloud for reform—for the vigerous use of the knife of reform—if, indeed it be owing to the remissness or incompetency of the surgeons entrusted with the health of the volunteers."

Now, sir, I will not undertake to be apologist for the *entire* medical staff, or to assert that it is perfectly free from individual instances of remissness or incompetency. That, perhaps, could not be said for any department of the Government, from the highest to the lowest; but justice demands that some one should volunteer to defend this body of brave, patriotic and intelligent men against untrue, unkind and unfounded accusations. Since you have made use of a professional metaphor—"*the knife of reform*"—allow me to remind you of another instrument which surgeons often have occasion to use before applying the knife, and that is the *probe*.

By way of continuing your metaphor I would suggest that you *probe* down to the very bottom of the evil and ascertain its seat, extent and bearings, before you apply the *knife* in your operation to reform. Probe, thoroughly, the medical staff, and if you find in it examples of incompetency or inattention to duty, let them be exposed and condemned. Probe the military officers, to know whether they carry out the sound, sanitary measures recommended by the surgeons. Probe the commissary and quartermaster's departments to ascertain whether sufficient hospital accommodations and supplies, and suitable food are furnished for the sick. Probe the action of the Surgeon General, to find out whether he promptly fills the requisitions of the surgeons in the field. Probe the War Department, to see

whether the Secretary has provided all the officers under him with every thing necessary for the relief, protection and comfort of the sick and wounded men. Probe the action of Congress, to know whether the representatives of the people have made sufficient appropriations to carry out these purposes. And lastly, probe the official conduct of our beloved President, the Commander-in-Chief of the Army and Navy, and honored with the highest office in the gift of the people, to see whether he duly appreciates the importance of the medical department of the Army and Navy in time of war, and provides accordingly; whether he takes the necessary steps to engage the services of the most competent men for his medical staff, and has them armed and equipped as the law directs. Such men are to be found, and should be sought for, instead of expecting them to bow at the footstool of power and beg for this laborious and hazardous and responsible position. The President calls for volunteers to defend the country, and thousands rush to his standard, relinquishing the comforts of home and all their private interests. They expect to labor, to endure hardships and to march up to the cannon's mouth, if necessary; but they likewise expect, and have a right to expect to be well fed, well clothed and skillfully treated if they get sick or wounded. And I have no hesitation in saying that the head of the Government should be held to a considerable extent accountable for the failure of these reasonable expectations. It certainly would not be more unreasonable to expect soldiers to gain victories without arms, than army surgeons to cure camp diseases and perform operations without medicines and instruments. Sir, if you had visited the encampments in Virginia, and examined the equipments furnished by Government to the Medical Staff, you would have doubtless been better informed as to where the responsibility rests for the sickness and suffering of our armies, and been more charitable and just in your comments on the action of the medical corps in the field. You might have traced it *in part* to the Surgeon

General, who sits at his bureau in Richmond, and never goes into the field to see for himself the real state of things. From him you might have traced it in part to the Secretary of War; from him to Congress; and from Congress to the Department of State; Where in my humble opinion, most respectfully expressed, lies the *fons et origo mali.* The greatest monarch of the day, Napoleon III, who is the embodiment of the State deems it his duty to order every possible provision for the care and protection of his soldiers. Who would dare assert that the noble army of patriotic citizen-soldiers who have placed themselves under command of the President of this glorious Confederacy are not equally worthy of his special care and attention? Of all the departments named, I am satisfied that Congress is less to blame for the evil complained of than any other. That body has voted liberal appropriations for the care of the sick and wounded, and it devolves on the Executive and War Departments to have them properly applied.

I trust, Mr. Editor, I have said enough to show your error in respect to the *first* of the *causes* to which you think the sickness of the army may be due, viz: *the incompetency of the medical staff;* and, furthermore, that if any blame is to be attached to the medical staff, the fault lies not in the incapability of the medical profession to "meet the exigencies of the times," but in the "appointing power," by which doubtless many incompetent and unqualified men have been intrusted with the medical care of our soldiers. But here let us do "the appointing power" the justice to say, the fault does not lie altogether there. It is well known that volunteers claim the privilege of choosing their own medical officers, and on their recommendation the President generally appoints. If they select "incompetent, unqualified and unworthy men" for this important position, they should blame no one but themselves, and deserve to suffer the consequences.

Now let us turn our attention to that "other fact" which you cite as one of the chief *causes* of sickness in our armies

—it is the *measles*. "The measles is the beginning of the evil." "In nine cases out of ten the disease commences with the measles; then comes the relapse, with its protracted fevers, pneumonia, diarrhea, dysentery, &c., either ending in death, or leaving the patient an emaciated skeleton, prostrated in mind, body and spirits."

Without criticising your citation of a *disease* as being the principal *cause* of disease in the army, I must commend your graphic description of the ordinary course of events. But you do not tell us how to avoid this potent cause, or how to get clear of it when it exists. You only suggest, in accordance with an extreme opinion which you happen to find in a newspaper, that soldiers with the measles should be kept in hospital or camp from four to six weeks after they have apparently recovered from the disease. It cannot be denied that they are often turned out too soon, and sometimes have to march, exposed to bad weather, while the disease is still upon them; but if you had seen the miserable accommodation provided by Government, for the sufferers under this sometimes dangerous complaint, you would have found other shoulders than those of the Medical Staff on which to lay the blame. I have known regiments of our noble volunteers sent to the field unprovided by Government with hospital tents, hospital supplies, medicines, or surgical instruments—indeed, with no other medicines and instrument than such as the surgeons themselves had supplied. I have seen old vacant houses appropriated to hospital purposes, and their naked floors crowded with cases of measles and diarrhea, without even a cup to drink from, a basin to spit in, or a certain other nameless vessel, so essential in the sick-room. Under these circumstances, what was called "the *hospital*," instead of being a desirable asylum, was the terror of the sick soldier, and he had to be forced into it. Now, sir, would you blame the Medical Staff for all this? It is well known that measles, when properly attended to, is not often a dangerous disease; but can soldiers in the field be properly attended to unless Government provides the means?

Everybody has felt disposed to make all possible allowance for the shortcomings of our young Government, so recently formed and so suddenly plunged into a terrible war, and the extreme difficulty that has existed in procuring the necessary supplies of medicines and instruments. All classes of people, old and young, rich and poor, male and female, have come to the rescue with unexampled energy, liberality and devotion. The people in every walk of private life have nobly done their duty in this national contest, and the officers of Government, from the highest to the lowest, are expected to do theirs; but if there be any blame for dereliction or disaster, let it rest upon the proper shoulders. I boldly assert that no profession or calling has displayed more patriotic devotion or self-sacrificing zeal in this glorious war than that to which I have the honor to belong. A single instance out of many shall alone serve to support my assertion. I visited the field of Manassas a short time after the great battle, and there I found a professional friend from Mississippi, at one of the farm houses at Bull Run, which had been turned into a hospital and filled with the wounded and sick of both armies. I asked him to what regiment he belonged? He said he belonged to none, but that, as an independent volunteer surgeon, he had been allowed to accompany the one from Mississippi, which contained the largest number of his neighbors and acquaintances; bearing his own expenses. Knowing him to be an excellent physician and surgeon, and finding him doing good service in the field, on my return to Richmond I brought him to the notice of the Surgeon General, who at once put his name on the list of applicants for the post of surgeon. Before learning the result, after the lapse of a week or two, my friend came down to the city to purchase some articles which he needed, and I told him what I had done in his behalf. He thanked me kindly, but positively declined accepting an appointment if it should be offered. He said it would only serve to cramp and confine him to a limited sphere, whereas, if

he were independent, he could go wherever his services were most needed; that he wanted no pay from the Government, and only wished the privilege of serving in the way he thought he could do the most good. I saw a gentleman offer him a horse. He gratefully refused; saying he had already accepted one from a lady, and could not afford to keep two. And thus this patriotic physician remains with his fellow-citizens in the tented field, abandoning a lucrative private practice at home. Perhaps you would like to know his name. I shall not give it, because I know it would offend him; but I may be permitted to say he is a native of the glorious Old Dominion.

But let us return to the measles, which you consider as "the obvious and tangible cause of the extraordinary amount of sickness in our camps." Viewed as the beginning of a long train of terrible *sequelæ*, or ills which too often follow, as it is managed in the army, you are correct in your position. But whence comes the measles in camps? Is there no way of stopping its progress and checking its ravages? I have no doubt that if these questions had been thoroughly investigated and the suggestions of the medical staff carried out, most salutary results might have been obtained; but if anything of the kind was undertaken or even thought of by the head of the Government, it never came to my knowledge. The truth is, our Government underrates entirely the importance of the medical branch of its War Department—appearing to deem it only necessary to provide the means for conquering and destroying its enemies, regardless of the health and protection of its own brave soldiers! It confers *no rank* on its medical officers, but holds them altogether subordinate to its military commanders; thus depriving them of the most powerful incentive to energetic action, and plainly showing that it sets a far higher value on its powers of destruction than on its means of self-preservation. The military hero may lead his soldiers to victory, but can he likewise staunch their bleeding wounds, amputate their gangrened limbs and restore their

mutilated bodies; or check the ravages of the pestilence in his camps? Does the Commander-in-Chief know that about fifteen soldiers are lost from camp disease to one that is killed in battle? If he does, he ought to see the importance of having an able medical staff, composed of men who are not only skilled in operative surgery, but likewise in the practice of medicine. Such men generally find lucrative employment in private life; and when you find them volunteering to act as surgeons—a position of danger and hardship, unaccompanied with rank and unappreciated by Government, you may rest assured that a *higher motive* actuates them than the miserable pittance of the army surgeon's pay. Those who really need this are generally the most eager to get the place and least qualified to fill it. From some cause or other, the Old Government, as well as the new, has opposed the conferring of rank on the medical staff of the Army and Navy, and I regret to learn that our distinguished President has been generally considered one of its leading opponents. With due deference, I must be allowed to express the opinion that it is a *very grave error;* and I trust the experiences of the present war will lead to its speedy correction. Under existing circumstances, what do we behold? The army so weakened by disease and so badly provided with hospitals, medical supplies and competent medical attendance, that the people have had to come to the rescue and furnish nearly every thing that was wanted. As I before stated, we are willing to make all due allowance for the shortcomings and difficulties of our new Government; but if there is any blame to be pronounced, let it fall in the right place.

So much, Mr. Editor for your first article. Having gone over so much ground in this, I shall be brief with the second, although it is much the most objectionable of the two.

You commence your second editorial (October 18th) with the remark—"We are satisfied, and have been for some time, that if there be a branch of the Government which needs overhauling, it is the medical department of the

army." In this I fully concur. You go on to say, "The sickness in the various camps has existed from the latter part of May to the present time. The men went into the army in good health, well provided with tents, with elastic spirits, and they have been usually located in healthy neighborhoods. * * The fact that this sickness should have thus gone on increasing from day to day, and that no preventives have been yet found, is an everlasting reproach to the medical authorities of the day." I beg to refer you to what I have said in defence of the medical staff against this unjust and unfounded charge. "At the outset, their attention should have been turned to the causes of this mischief, and the proper preventive applied." Whose duty was it to turn attention to the matter, to inquire for preventive measures and have them executed? "Their powers are of the amplest character." Either you or I must be sadly at fault on this point, for according to my understanding, the medical staff has only the most limited powers, and occupies altogether a subordinate position. You say, "We happen to know that they had every aid from the Generals and associated officers in command."

Now I happen to know, from personal observation, that they received very little aid either from the officers in command or the head of the medical department in Richmond. I made it my business to inquire particularly into the matter, both at Yorktown and Winchester—made notes of the deplorable deficiencies in everything requisite for the care and treatment of sick soldiers, and laid them before the *then* Surgeon General. I showed them to Maj. Gen. Polk, who said they ought to be seen by the President and Secretary of War, and took them from me for that purpose, but I know not whether it was done. This I know—that more than a month afterwards I met with a medical inspector on his return from Yorktown, where he had been sent to examine into the condition of the sick; and from what he told me, it was fully as bad, if not worse in every respect, than when I was there. For instance—

he said there were perhaps a thousand cases of intermittent fever at one place, and not half an ounce of quinine in the hands of the surgeons. Requisition on requsition had been sent up to Richmond, but not received. Call you this "abundant aid" to the medical officers? What would you say of the Government if it knew of a division of its army, located within six hours travel from the capital, which was badly supplied with comforts and almost destitute of arms, but actually engaged with the Yankees, who had already wounded a thousand men, killed a few, and would probably destroy or take the whole unless they should make their escape? *Perhaps* you would denounce the proceeding! But in the instance before us a similar case is presented. A gallant division is closely beleagured by an invisible foe, which had wounded upwards of a thousand of our men and killed more than the Yankees did in the battle of Great Bethel; yet unprovided with means of defense. And what do we hear from you? A bitter denunciation of the *special officers* in command, for allowing the enemy to steal a march on them, and not conquering him without weapons.

You go on to say, "In any instances in which they (the surgeons) have failed because the requisite help was not extended to them by other departments of the army, they should have appealed to the proper authorities here, and if this appeal (contrary to our firm belief) had proved ineffectual, they should have thrown up their commissions rather than appear as the heartless and indifferent spectators of the sufferings of our troops."

In this paragraph you show your *prejudice* against the Medical Staff, and recommend a course not likely to be adopted by the honorable, benevolent and patriotic members of the profession, who deem it their duty to stand by their men in all difficulties and dangers, and to share their fate.

You say, "All the accounts which have come to us have made a most unfavorable impression as to the care of the

sick by the surgeons," and then cite an instance where some four or five hundred sick men reached Manassas late in the day, on their way to richmond; the rain was pouring down, and no provision whatever had been made for their reception; they were forced out of the cars, and left to seek shelter as best they could. Some few managed to get into the hospitals—the rest had to lie down in the rain, with no covering but the leaves of the trees and their blankets. These soldiers were allowed to pursue their journey in the cars to Richmond without food of any kind, and were dependent on the charity of private individuals for relief from the cravings of hunger. "On reaching the city a similar neglect prevailed, and men with frames so weak that they could hardly stand up, were allowed to wander helplessly in the streets, without direction or guidance." This is a horrible picture, but, I have no doubt, a true one. You then ask, "What possible excuse can there be for such wretched mismanagement? What brutality of the Yankees to our prisoners can exceed this infamous wrong and outrage upon the men who are willing to lay down their lives for their country?" I beg leave to say in reply, I can think of nothing comparable to "this infamous wrong and outrage," except the *heartless injustice* with which you attempt to saddle the entire blame on the army surgeons! You ought to know, sir, that it is not the sole duty of the surgeons to provide either suitable transportation or comfortable entertainment for sick soldiers; and I am pained to see an able and distinguished editor making studied and persevering efforts to shift the blame of this crying evil off the shoulders that should bear it.

Can it be possible that you are afraid to make your attack in the quarter where it really lies; If so, I pity the hard fate of our brave volunteers.

You say "you are persuaded that the able and energetic man at the head of the War Department will find, on giving his attention to the subject, that abuses exist which

call loudly for reform, and you do not believe that he will permit such things to continue."

I can only say that if he does not, he will do much better than his predecessor, and will merit the gratitude both of the army in the field and their friends at home.

I beg to say, in conclusion, that the strictures I have made on the official conduct of the heads of the War and Medical Departments refer mainly to occurrences which took place before the present worthy incumbents came into office. And likewise, those on the Executive refer to the defects of the department, and are made with a profound respect for the distinguished individual to whom we have entrusted "*the appointing power.*" I am fully aware of the very great difficulties the Government in its isolated condition has had to encounter in procuring supplies of medicines and surgical instruments. But when I see the able editor of an influential paper undertaking to investigate the causes of the distressing sickness that has afflicted our armies, and unjustly laying all the blame on the medical staff, I consider it my privilege to offer an humble effort in its defense. Justice demands it, and I trust the urbanity and liberality of the Examiner will allow it a place in its columns.

Very respectfully, E. D. FENNER, M. D.

New Orleans, Nov. 15, 1861.

P. S.—It was intended to send this paper to the Examiner direct, but the writer having no personal acquaintance with the editor, could not feel certain of its acceptance. He has therefore concluded to accept the kind offer of the editors of the Delta to publish it in their widely circulated paper; and through this channel he most respectfully submits it to the editor of the Examiner, with the request that he will give it a place. The writer sincerely trusts that the able editor of that paper will properly appreciate the motive that actuates him. E. D. F.

Editorial.

Our Army Surgeons.

We have received from that estimable and cultivated gentleman, Professor E. D. Fenner, of New Orleans, a well written and from the character of the author, no doubt truthful article, entitled "A Plea for the Medical Staff of our Army."

We transfer this merited defence of our Army Surgeons to the pages of the North Carolina Medical Journal, in the hope that our readers will carefully peruse it and deliberately consider its contents. It is full time that the people of our country understood this question, so that the entire weight of responsibility may fall on the right ones. No matter how high their position, let them be held to a strict accountability for their short comings and shameful neglect of this important arm of the public service.

Subscribers.

This number of the Journal closes the volume for this year, and we are sorry to be compelled to make our bow to the friends—did we say *friends?* we should have said *readers*, of the Journal, and to inform them that the *North Carolina Medical Journal will be discontinued for want of support.* The circular found below, which has been sent to all delinquent subscribers, and to which Four Gentlemen

have responded, will explain the *pressing necessity* which impels us to take this step. The enterprise is full three hundred dollars behind for this year, and by any fair means of computation *we can resort to*, and depend upon it, good reader, we have *worked it by every rule of arithmetic we know* it will be six hundred dollars more in debt next year. That will make the entire indebtness of the Journal this time next year *nine hundred dollars;* and that indebtedness will be to us, for the *publishers must be paid.*

In taking leave of our readers, we wish to inform them, that we feel in every way responsible for the character of the Journal for this year, save in one single particular. We must not be held to any accountability for the character of the controversial pieces which have occupied so much space in each issue of the Journal for this year, excepting the July number—These have been published in the form they have been sent to us, without regard to our individual opinion of them, in a professional, literary or other points of view, because we have really felt instructed by the society so to do. If we have misapprehended the purpose of the Society, there are many reasons why we should regret it. But, in point of fact, such has been our honest conviction of duty as the representative of the Society, and we have acted accordingly.

(CIRCULAR.)

DEAR SIR:—You owe me *Three Dollars* for your subscription to the North Carolina Medical Journal for the year 1861.

The whole labor and expense of editing and publishing this Journal for this year, has fallen upon me, and I have expended full *Three Hundred Dollars* more upon it than has been paid to me by subscribers and the Medical Society of the State.

I am still, as I have been all the while, perfectly willing to give my time and labor to this work, for the sake of the medical profession of my State, and of the South; but I cannot consent in these troublous times to spend any more money upon it. If, therefore, I am not reimbursed for what the Journal has already cost me in actual money, it must, in justice to myself be discontinued.

It would not be proper for me to say anything in regard to the character of the North Carolina Medical Journal, so far as my connection with it is concerned; nor of the immediate value of this work to the Medical profession of this State particularly, especially under existing circumstances of non-intercourse with the United States and Europe, for of this, as of all my work, I desire that it shall be judged by its merits.

Very respectfully,

CHAS. E. JOHNSON.

Errata in Dr. Manson's Article in the Sept. No.

Page 435, on 8th line from top, for Laennec Avenbrugger," read "Laennec *and* Avenbrugger," and omit "*and*" after Avenbrugger.

Page 439, in foot note, for "*carniverous omniverous,*" read "*carniverous* AND *omniverous,*" and in the same note for "*chloepyrrhim*" read "chole. pyrrhin."

Page 440, on the fourth line from bottom for "Pneumoniavec Hepatite, op eè," read "Pneumonie avec Hepatite op. et."

On same page on 2nd line from bottom, for "Hepatites," read "Hepatitis."

On page 445, on 17th line from bottom, for "erasion," read "erosion,"

On page 445, on 12th line from bottom, for "Taracelsus,," read "Paracelsus."

On page 446, 12th line from top, for Borden read Bordeu.

On page 446, 12th line from top for Bichot, read Bichat.

On page 446, 24th line from top, for Hematologee, read Hematologie.

On page 446, 25th line from top, for nosohemics, read nosohemics.

On page 446 34th line from top, for diopedesis, read diapedesis.

On page 450, 3rd line from bottom, for Cowrs, read Cours.

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Richmond, August 1, 1361.

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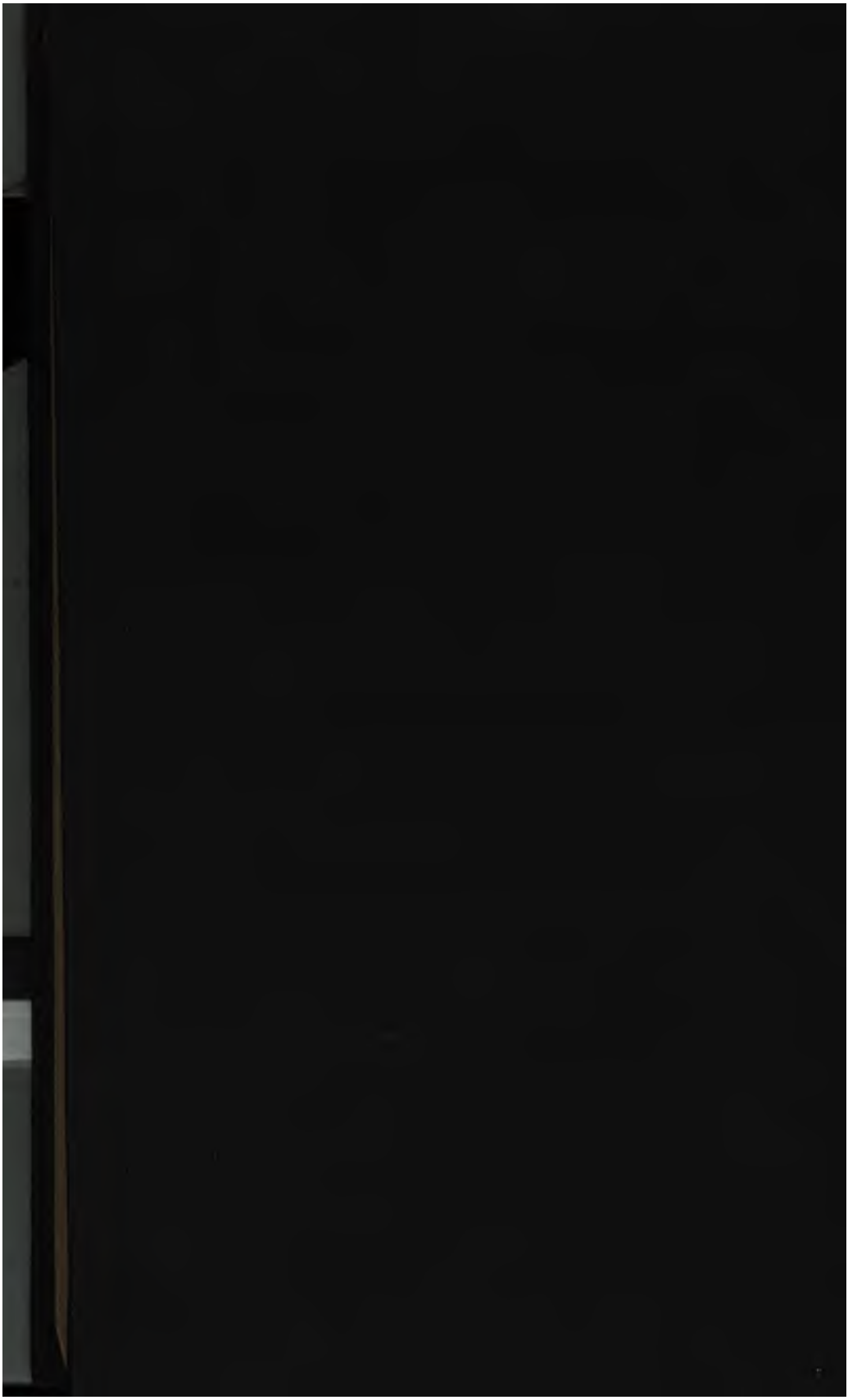
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